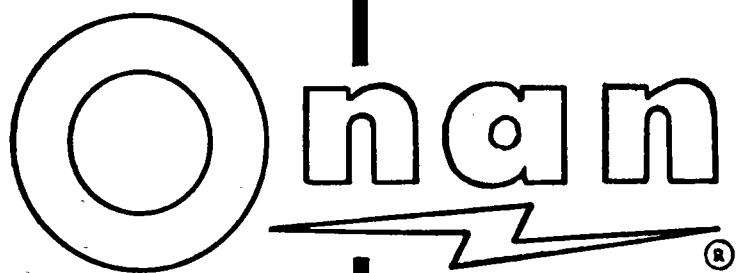


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# SERVICE AND PARTS CATALOG

SERIES  
**CW**

**ELECTRIC GENERATING PLANTS**

**ONAN**

1400 73RD AVENUE N.E. • MINNEAPOLIS, MINNESOTA 55432  
A DIVISION OF ONAN CORPORATION

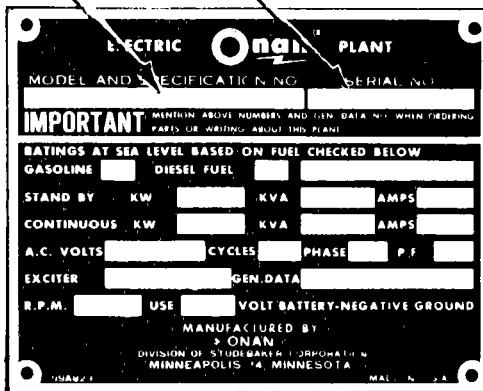
## INSTRUCTIONS FOR ORDERING REPAIR PARTS

For parts or service, contact the dealer from whom you purchased this equipment or refer to your Nearest Authorized Parts & Service Center.

To avoid errors or delay in filling your parts order, please furnish all information requested.

Always refer to the nameplate on your plant:

1. Always give the MODEL & SPEC. NO. and SERIAL NO.



For handy reference, insert YOUR plant nameplate information in the spaces above.

2. Do not order by reference number or group number, always use part number and description.
3. Give the part number, description and quantity needed of each item. If an older part cannot be identified, return the part prepaid to your dealer or nearest AUTHORIZED SERVICE STATION. Print your name and address plainly on the package. Write a letter to the same address stating the reason for returning the part.
4. State definite shipping instructions. Any claim for loss or damage to your unit in transit should be filed promptly against the transportation company making the delivery. Shipments are complete unless the packing list indicates items are back ordered.

Prices are purposely omitted from this Parts Catalog due to the confusion resulting from fluctuating costs, import duties, sales taxes, exchange rates, etc.

For current parts prices consult your Onan Dealer, Distributor, or Parts and Service Center.

"En esta lista de partes los precios se omiten de propósito, ya que bastante confusión resultó de fluctuaciones de los precios, derechos aduanales, impuestos de venta, cambios extranjeros etc.

Consiga los precios vigentes de su distribuidor de productos "ONAN".

## PARTS CATALOG

This catalog applies to the standard CW Plants (including mobile application plants) as listed below. Parts are arranged in groups of related items. Each illustrated part is identified by a reference number corresponding to the same reference number below the illustration. Parts illustrations are typical. Using the *Model and Spec. No.* from the plant nameplate, select the Parts Key No. (1, 2, etc., in the last column) that applies to your plant Model and Spec. No. This Parts Key No. represents parts that differ between models. Unless otherwise mentioned in the description, parts are interchangeable between models. Right and left plant sides are determined by *facing* the engine end (front) of the plant.

**PLANT DATA TABLE**

* MODEL & SPEC. NO.	ELECTRICAL DATA					PARTS KEY NO.
	WATTS	VOLTS**	CYCLE	PHASE	WIRES	
5CW-1M/	5,000	120	60	1	2	1
5CW-2M/	5,000	240	60	1	2	1
5CW-3M/	5,000	120/240	60	1	3	1
5CW-4M/	5,000	120/208	60	3	4	1
5CW-5M/	5,000	240	60	3	3	1
5CW-1R/	5,000	120	60	1	2	2
5CW-2R/	5,000	240	60	1	2	2
5CW-3R/	5,000	120/240	60	1	3	2
5CW-4R/	5,000	120/208	60	3	4	2
5CW-5R/	5,000	240	60	3	3	2
5CW-6R/	5,000	480	60	3	3	2
5CW-7R/	5,000	220/380	60	3	4	2
5CW-8R/	5,000	127/220	60	3	4	2
5CW-53M/	5,000	120/240	50	1	3	1
5CW-54M/	5,000	120/208	50	3	4	1
5CW-57M/	5,000	220/380	50	3	4	1
5CW-53R/	5,000	120/240	50	1	3	2
5CW-54R/	5,000	120/208	50	3	4	2
5CW-55R/	5,000	240	50	3	3	2
5CW-57R/	5,000	220/380	50	3	4	2
6CW-53R/	6,250	120/240	50	1	3	4
6CW-54R/	6,250	120/208	50	3	4	4
6CW-55R/	6,250	240	50	3	3	4
6CW-55DR/	6,250	120/240	50	3	4	4
6CW-56R/	6,250	480	50	3	3	4
6CW-57R/	6,250	220/380	50	3	4	4
705CW-1R/	7,500	120	60	1	2	4
705CW-2R/	7,500	240	60	1	2	4
705CW-3R/	7,500	120/240	60	1	3	4
705CW-3R17/	7,500	120/240	60	1	3	4
705CW-4R/	7,500	120/208	60	3	4	4
705CW-5R/	7,500	240	60	3	3	4
705CW-5DR/	7,500	120/240	60	3	4	4
705CW-6R/	7,500	480	60	3	3	4
705CW-7R/	7,500	220/380	60	3	4	4
8CW-3R/	8,000	120/240	50	1	3	4
8CW-4R/	8,000	120/208	50	3	4	4
8CW-53M/	8,000	120/240	50	1	3	3
8CW-54M/	8,000	120/208	50	3	4	3
8CW-55M/	8,000	240	50	3	3	3
8CW-56M/	8,000	480	50	3	3	3
8CW-57M/	8,000	220/380	50	3	4	3
8CW-53R/	8,000	120/240	50	1	3	4
8CW-54R/	8,000	120/208	50	3	4	4
8CW-55R/	8,000	240	50	3	3	4
8CW-55DR/	8,000	120/240	50	3	4	4
8CW-56R/	8,000	480	50	3	3	4
8CW-57R/	8,000	220/380	50	3	4	4
9CW-3R/	9,000	120/240	60	1	3	4
9CW-4R/	9,000	120/208	60	3	4	4
10CW-3M/	10,000	120/240	60	1	3	3
10CW-4M/	10,000	120/208	60	3	4	3
10CW-5M/	10,000	240	60	3	3	3
10CW-6M/	10,000	480	60	3	3	3

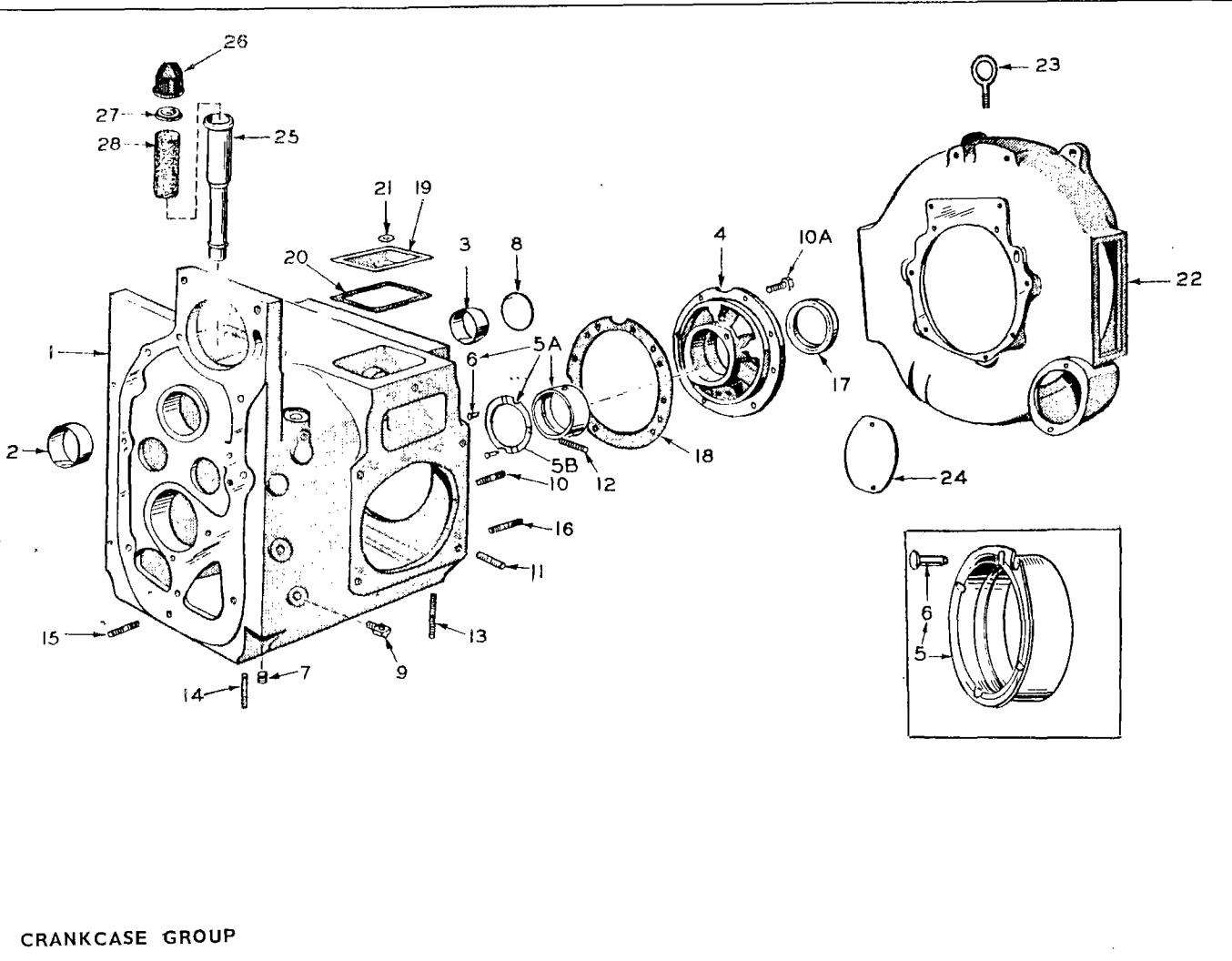
**PLANT DATA TABLE (Cont.)**

* MODEL & SPEC. NO.	ELECTRICAL DATA					PARTS KEY NO.
	WATTS	VOLTS**	CYCLE	PHASE	WIRES	
I0CW-3R/	10,000	120/240	60	1	3	4
I0CW-4R/	10,000	120/208	60	3	4	4
I0CW-5R/	10,000	240	60	3	3	4
I0CW-5DR/	10,000	120/240	60	3	4	4
I0CW-6R/	10,000	480	60	3	3	4
I0CW7R/	10,000	220/380	60	3	4	4
I0CW-8R/	10,000	127/220	60	3	4	4
I0CW-150R/	10,000	250	DC		2	5
MOBILE APPLICATION PLANTS ***	SPECIFICATION NUMBERS, 96, 665, 980, 1329, 1338, 1511, 1597, 1615, 1689, 1725, 1775, 1776, 1813, 1819, 1824, 1837, 1841, 1850, 1970, 1991, 2148, 2203, 2206, 2217, 2428, 2537					6

\* - The Specification Letter Advances (A to B, B to C, etc.) with Manufacturing Changes.

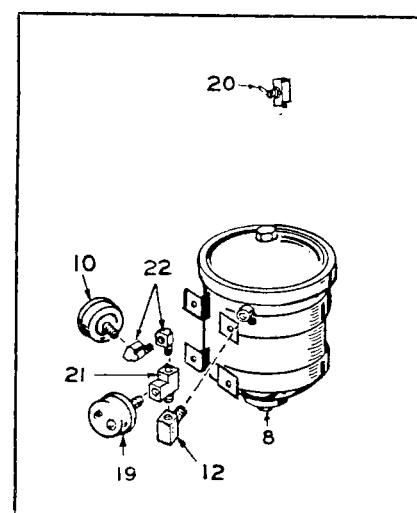
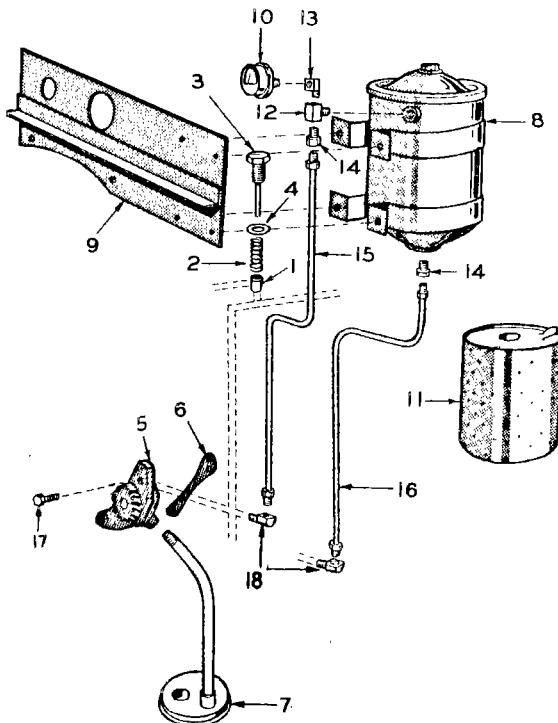
\*\* - Reference to 120, 240, 120/240 and 480-volt Also Applies to 115, 230, 115/230 and 460-volt.

\*\*\* - Parts that Differ Between Mobile Application Plants will Also have the Specification Number Shown in the Part Description.



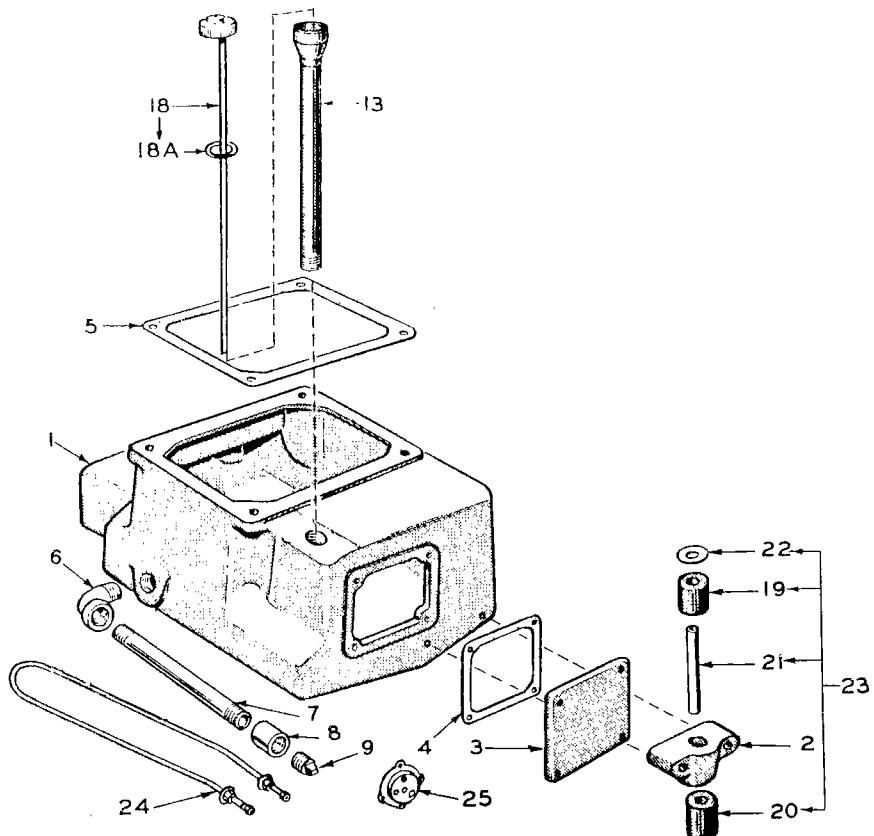
## **CRANKCASE GROUP**

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>	<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PARTS DESCRIPTION</u>
1	101A236	1	Crankcase, (Incl. Brgs., Rr. Brg. Plate & Oil Seal) - Repl. 101A217	10A	805-18	8	Bolt, Place, Rear Brg. Plate Begin Spec. E
2	101B373	1	Bearing, Frt. Cam., Prec. Type (Repl. 101A70)	11	520A431	8	Stud, Cyl. Base
3	101A367	1	Bearing, Rr. Cam., Prec. Type (Repl. 101A50)	12	520A434	2	Stud, Cyl. Base
4	PLATE, REAR CRANKSHAFT BRG. 101C67	1	To Spec. E	13	520A432	2	Stud, Oil Base, Spec. A
	101C268	1	Begin Spec. E	14	520A433	2	Stud, Oil Base, Spec. A
5		2	Bearing Kit, Crankshaft, Frt. & Rr. - To Spec. J, See Ref. No. 5A	15	STUD, GEAR COVER 520A9	6	Spec. A
5A	101K341	2	Bearing Kit, Crankshaft - Frt. & Rr., Incl. Thrust Washer & Pins, Prec. Type, Bronze Faced, Specify: Std. or .002", .010", .020" or .030" Under., Original Equip. Begin Spec. J Repl. Alum. Flanged Brg. Kit 101K220 Used on Earlier Models	16	520A11	1	Begin Spec. B
				17	520A118	6	Stud, Flywhl. Hsg., Spec. A
				18	509P64	1	Seal, Oil, Crankshaft Rear
				19	101K116	1	Gasket Kit, Rr. Brg. Plate (Assorted Thickness)
				20	110B640	2	Cover, Valve Box
				21	110A647	2	Gasket, Valve Box Cover
				22	526-63	2	Washer, Copper - Valve Cover Screw
				23	HOUSING, FLYWHEEL 101E188	1	Spec. A Only
					101E222	1	Key 1,2,3,4,6 - Begin Spec. B
					101B229	1	Key 5
				24	403A95	1	Bolt, Eye - Lifting
5B	104B432	2	Washer, Crankshaft Thrust	25	101A154	1	Plate, Cover, Flywhl Hsg. Opening, Spec. A
6	516A72	As Req.	Pin, Lock (2) Flanged Brg., (4) Separate Thrust Washers	26	123A445	1	Tube, Breather - Begin Spec. B
7	505-274	4	Plug, Countersunk Hd.	27	123A458	1	Cap, Breather Tube - Begin Spec. B
8	517-48	1	Plug, Exp., Rr. Camshaft Brg. Opening (Repl. 517-18)	28	123A315	1	Valve, Breather
9	502-2	2	Elbow, Oil Filter Lines		123-452	1	Filter, Breather Tube - Begin Spec. B
10	520A11	8	Stud, Rear Brg. Plate, To Spec. E				

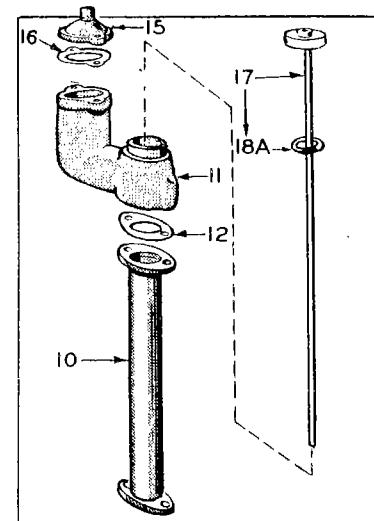


OIL PUMP, OIL FILTER & BY-PASS GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION
1	I20A222	1	Piston, Valve - Oil By-pass	14	502-3	2	Connector, Inv. Flare - Lines to Filter
2	I20A221	1	Spring, Oil By-Pass (Repl. I20A270)	15	I22B94	1	Line, Filter Inlet
3	I20A224	1	Screw, Guide - Oil By-Pass (Repl. I20A380)	16	I22B95	1	Line, Filter Outlet
4	526-153	1	Washer - Copper - Oil By-Pass (Repl. 526-69)	17	I20A182	1	Screw, Shoulder - Pump Mtg.
5	I20A279	1	Pump, Oil	18	502-2	2	Elbow, Inv. Flare, Filter Lines, Key 1,2,3,4,5
6	I20K161	1	Gasket Kit, Pump	19	309B10	1	Switch, Cut-off - Low Oil Press. (Opt.) Key 6
7	I20B275	1	Cup, Intake - Pump	20	308-97	1	Switch, Momentary Contact (Used with Opt. Cut-off Switch) Repl. 308P37, Key 6
8	I22C56	1	Filter, Incl. Cartridge	21	502-58	1	Tee, (Opt.) Cut-off Switch Mtg., Key 6
9	I22C122	1	Bracket, Filter (Repl. I22C89 & I22C120)	22	502-20	2	Elbow, St. (Two Used to Mt. Oil Gage Optionally Facing Left) Key 6
10	I93P6	1	Gage, Pressure				
11	I22-37	1	Cartridge, Filter				
12	502-57	1	Tee, Filter Inlet				
13	505-52	1	Elbow, Press. Gage Conn.				



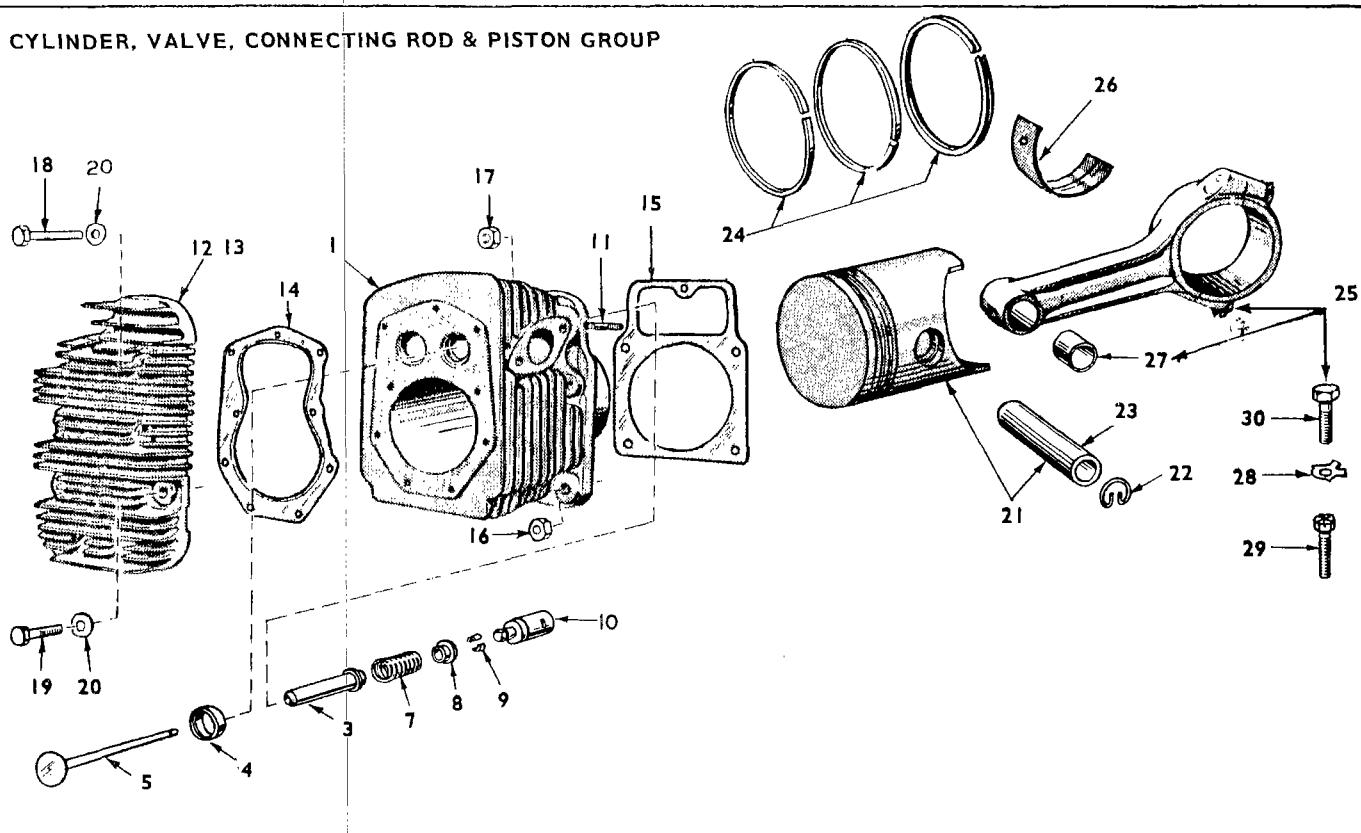
OIL BASE GROUP



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	BASE, OIL I02E220 I02E262	1 1	Spec. A, Key 1,2,3,4,5 Begin Spec. B, Key 1,2,3,4,5 & 6 (Except Spec. 2428)
	I02E465	1	Key 6 (Spec. 2428 Only)
2	FOOT, OIL BASE I02B223 I02B271	2 2	Spec. A Begin Spec. B
3	COVER, OIL BASE OPENING I02A221 I02A248	1 1	Standard Optional - For Heater Assy, Less Heater
4	I02A222	1	Gasket, Oil Base Opening Cover
5	I02B215	1	Gasket, Oil Base to Crkcase.
6	505-51	1	Elbow, St. - Oil Base Drain (3/4")
7	505-268	1	Pipe, Oil Drain (3/4 x 9)
8	505-29	1	Coupling, Drain Pipe, 3/4"
9	505-130	1	Plug, Oil Drain - 3/4"
10	I23C402	1	Tube, Oil Fill - Spec. A Only
11	I23C388	1	Housing, Crankcase Breather- Spec. A Only
12	I23A380	2	Gasket - Oil Fill Tube, Breather Hsg., Spec. A Only

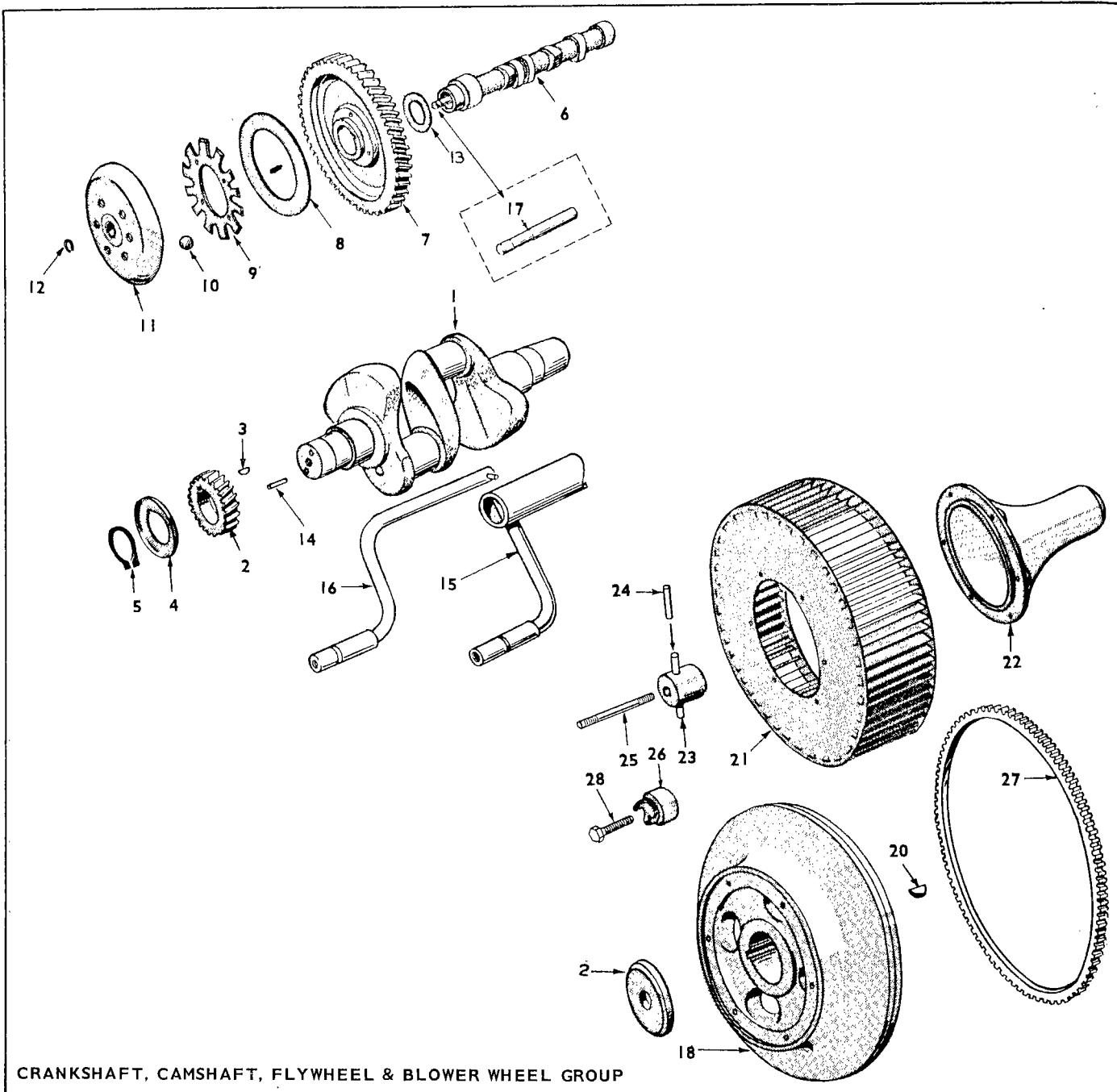
REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION
13	I23A437	1	Tube, Oil Fill - Begin Spec. B
15	I23B409	1	Cap, Breather Hsg., Spec. A Only
16	I23A410	1	Gasket, Breather Hsg., Spec. A Only
17	I23A378	1	Indicator, Oil Level - Spec. A Only
18	I23A439	1	Indicator, Oil Level - Begin Spec. B
18A	I23A191	1	Gasket, Oil Level Indicator
19	402A36	4	Cushion, Mtg. - Upper
20	402A38	4	Cushion, Mtg. - Lower
21	402A46	4	Bushing, Cushion Spacer
22	526A124	8	Washer, Mtg. Cushion
23	MOUNTING ASSY. - INCL. REF. I9,20,21,22 PLUS HARDWARE		
	402A103	4	With 6" Bolt
	402A219	4	With 8" Bolt (Optional)
24	333B42	1	Element, Heater - Oil Base (Opt.)
25	309-29	1	Thermostat - Oil Heater Cont. (Opt.)

CYLINDER, VALVE, CONNECTING ROD & PISTON GROUP



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION
1	BLOCK, CYL. - INCL. VALVE GUIDES & EXH. VALVE SEAT INSERT - LESS VALVES, ETC.			13	110D637	1	Right Hand, Std. Comp., For Gasoline Fuel
	110C757	1	Left Hand, Std.	13	110D748	1	Right Hand, High Comp., For Gas Fuel
	110C1201	1	Left Hand with Stellite Intake & Exhaust Valve Seat Inserts Optional	14	110B641	2	Gasket, Cyl. Hd.
	110C756	1	Right Hand, Std.	15	110B645	2	Gasket, Cyl. Base
	110C1200	1	Right Hand, with Stellite Intake & Exhaust Valve Seat Inserts - Optional	16	110A707	8	Nut, Cyl. Base Mtg.
	110A646	2	Exhaust - Specify: Std. or .002", .005", .010", .025" Over.	17	104A91	2	Nut, Cyl. Base Mtg.
3	110B644	4	Guide, Valve	18	110A815	10	Screw, Hex. Hd. Cyl. Hd. Mtg.
4	INSERT, VALVE SEAT - STELLITE			19	110A814	8	Screw, Hex Hd. Cyl. Hd. Mtg.
	110A646	2		20	526A127	18	Washer, Cyl. Hd. Mtg.
				21	112-90	2	Piston & Pin -Specify: Std. or .010", .020", .030" or .040" Over. (Repl. 112-55)
5	110A1191	2	Intake - Optional	22	112A19	4	Ring, Lock - Piston Pin
5	VALVE			23	112A54	2	Pin, Piston - Specify: Std. or
	110B642	2	Exhaust - Stellite - Std.	24	113-105	2	Ring Set - For 1 Piston - Specify: Std. or .010". .020", .030", .040" Over. (Repl. 113-59)
	110B1195	2	*Exhaust - Stellite - For Rotator - Optional	25	114B64	2	Rod, Connecting
	110B643	2	Intake - Std.	26	114B53	4	Bearing Half, Con. Rod - Specify: Std. or .002", .010", .020", .030" Under.
	110B1193	2	*Intake - Stellite - Optional	27	114B54	2	Bushing, Piston Pin - Semi- Finished
7	110A738	4	Spring, Valve	28	114A20	4	Washer, Lock - Con. Rod Screw - (See Ref. 30)
8	RETAINER, VALVE SPRING			29	114A57	4	Screw, Conn. Rod - (See Ref. 30)
	110A648	4	Used with 110B642 & 110B643 Valves	30	805-20	4	Bolt, Place - Repl. 114A20 & 114A57
	110A1204	4	*Used with 110B1193 & 110B1195 Valves - Optional				
8	110A620	4	*Rotocap, Valve - Used with 110B1193 & 110B1195 Valves Optional				
9	110A639	8	Lock, Valve Sprg. Retainer				
10	115A34	4	Tappet, Valve - Incl. Adj. Screw				
11	520A11	4	Stud, Exhaust Manifold				
12, 13	HEAD, CYL. - (Be Sure Both Heads are of the Same Compression)						
12	110D638	1	Left Hand, Std. Comp., For Gasoline Fuel				
12	110D749	1	Left Hand, High Comp. For Gas Fuel				

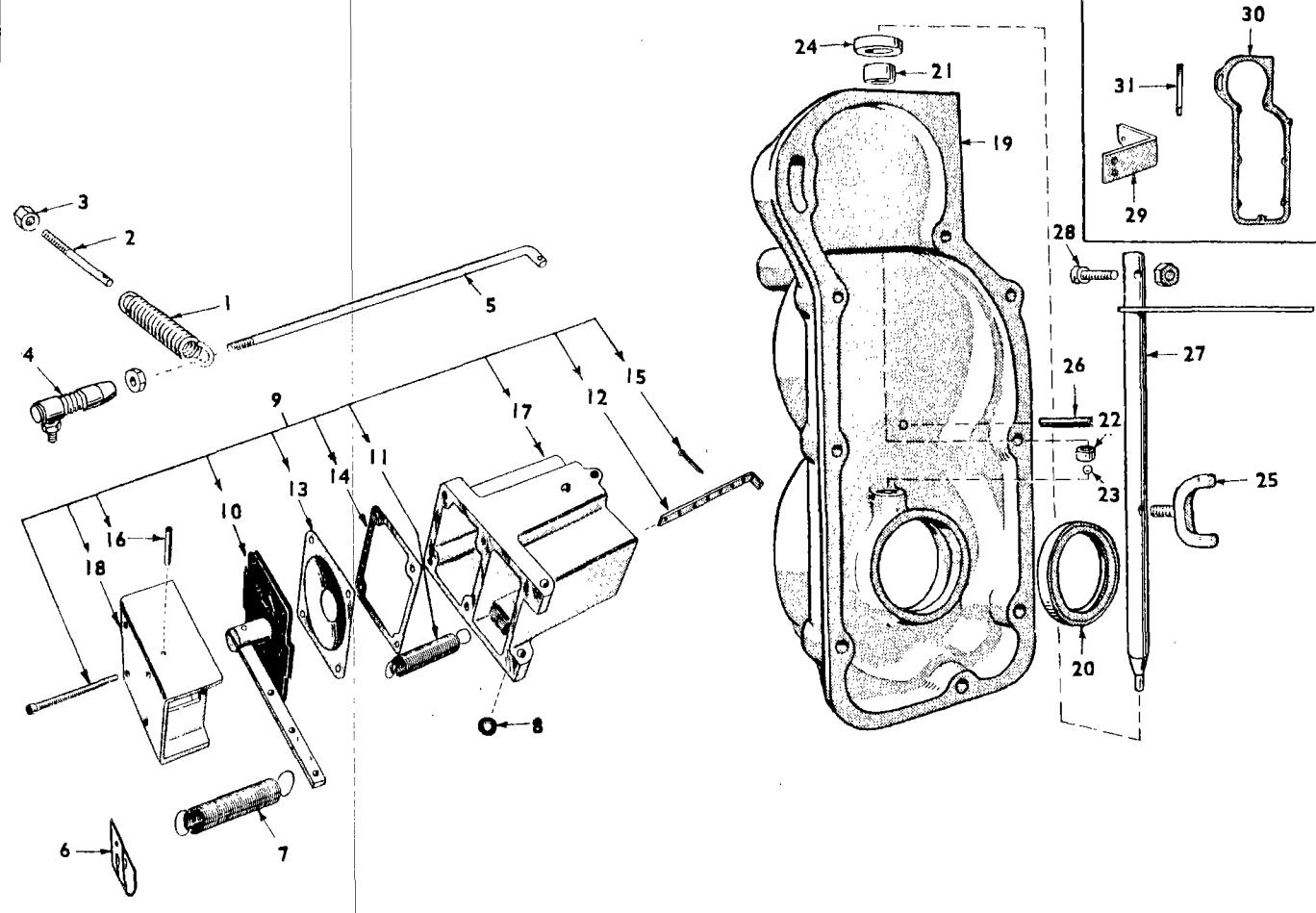
\* - The optional Stellite Valve has its groove located 1/4" from end of stem to accommodate optional Rotocap Valve Rotators and not change spring tension. If the Rotocap is not used on this valve, the optional 110A1204 Spring Retainer (.13/64" thick at O.D.) is required for proper spring tension.



CRANKSHAFT, CAMSHAFT, FLYWHEEL & BLOWER WHEEL GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	104D172	1	Crankshaft
2	104B1	1	Gear, Crankshaft
3	515-1	2	Key, Crnkshft & Camshft. Gr.
4	104A365	1	Washer & Slinger, Crnkshft. Gear (Repl. 104A95)
5	518-16	1	Ring, Lock - Crnkshft. Gr. Washer
6	105A112	1	Camshaft - Incl. Center Pin
7	105B107	1	Gear, Camshaft
8	150A413	1	Plate, Back - Gov. Ball
9	150C417	1	Spacer, Gov. Ball
10	510-46	12	Ball, Fly - Governor
11	150A440	1	Cup, Governor
12	150P437	1	Ring, Snap - Center Pin
13	105A42	1	Washer, Thrust - Cam. Gear
14	516A116	2	Pin, Roll - Crank Guide Pilot
15	CRANK, HAND		
15	192C259	1	Spec. A, B - Housed Plants (Repl. 192C204)

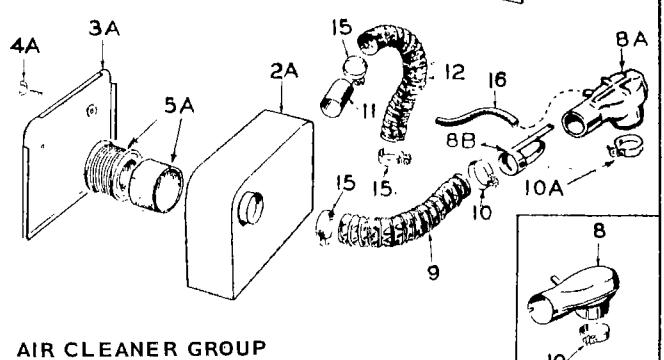
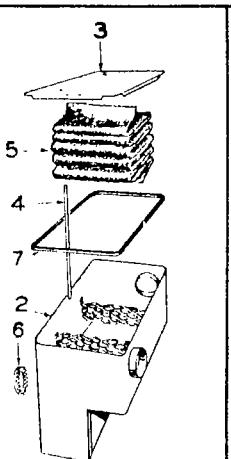
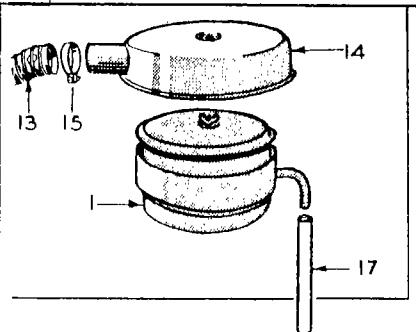
REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION
16	192C268	1	Begin Spec. C
17	150A435	1	Pin, Camshaft Center
18	FLYWHEEL		
	104D192	1	Key 1,2,3,4,6
	104A205	1	Key 5 - Incl. Ring Gr.
19	104A160	1	Washer, Flywheel
20	515-90	1	Key, Flywheel Mtg.
21	134C388	1	Wheel, Blower
22	134C387	1	Hub, Blower Wheel
23	192B193	1	Support Guide, Crank - Incl. Dowel Pins - Spec. A,B
24	516A11	2	Pin, Dowel - Crank Support - Spec. A,B
25	520A451	1	Stud, Blower Wheel & Support Spec. A,B
26	104B252	1	Dog, Crank, Begin Spec. C
27	104-137	1	Gear, Ring - Key 5
28	800-75	1	Screw, Dog Mtg., Begin Spec. C (Repl. 806-38)



#### GOVERNOR & GEAR COVER GROUP

Note: Vacuum booster parts do not apply to X-Ray models (705CW-3R17/).

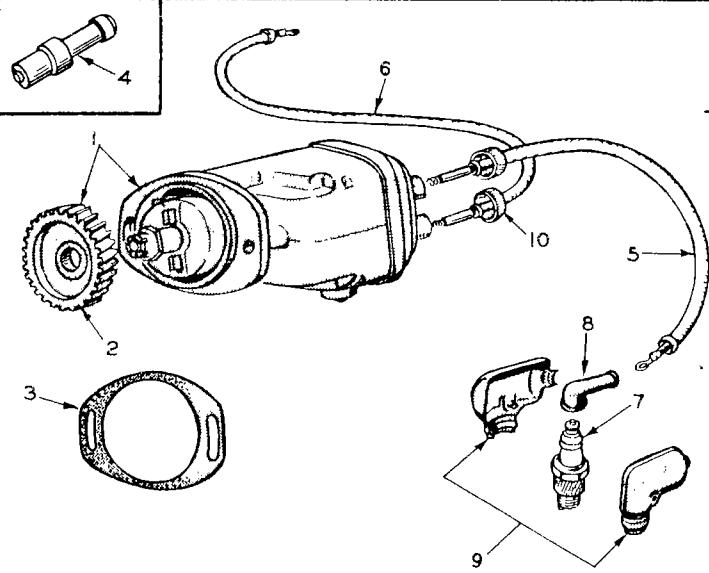
<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>	<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTION</u>
1	150A115	1	Spring, Governor	15	516-39	1	Pin, Cotter, Key 3,4,5,6
2	150A96	1	Stud, Gov. Sprg. Tension	16	516-85	1	Pin, Roll, Key 3,4,5,6
3	150A398	1	Nut, Gov. Spd. Adj.	17		1	Housing, Vacuum Booster (Not Sold Separately)
4	150A639	1	Joint Ball, Gov. Link (Repl. 150A300)	18		1	Cover, Vacuum Booster Hsg. (Not Sold Separately)
5	150A410	1	Link, Gov. Arm to Carb.	19	COVER, GEAR - ASSY., INCL. REF. 20-29		
6	150A495	1	Bracket, Booster Ext. Sprg. Key 3,4,5,6	103C115		1	Spec. A
7	150A471	1	Spring, Ext. Booster - Key 3,4,5,6	103C173		1	Begin Spec. B (Repl. 103C140)
8	150A425	1	Ring, Gasket - Booster to Man. - Key 3,4,5,6	20	509-19	1	Seal, Oil - Crnkshft. Frt.
9	150K580	1	Kit, Booster Repl. Key 3,4,5,6	21	510-48	1	Bearing, Needle (Upper)
10	150K582	1	Kit, Booster Diaph., Key 3,4,5,6	22	510-49	1	Bearing, Needle (Lower)
11	150A475	1	Spring, Booster - Int., Key 3,4,5,6	23	510-14	1	Ball, Brg., Shaft Thrust
12	150A376	1	Bracket, Booster Int. Sprg., Key 3,4,5,6	24	509-46	1	Seal, Oil - Gov. Shaft
13	150A666	1	Plate, Diaph., Booster, Key 3,4,5,6 (Repl. 150A373)	25	150A444	1	Yoke, Governor Shaft
14	150A668	1	Gasket, Diaph. Plate, Key 3,4,5,6 (Repl. 150A374)	26	516-90	1	Pin, Stop - Gov. Cup
				27	150B416	1	Arm & Shaft Gov.
				28	150A438	1	Screw, Adj. - Gov. Sensitivity
				29	150A411	1	Bracket, Gov. Spring
				30	103C110	1	Gasket, Gr. Cover Mtg.
					520A363	1	Stud, Arm Cover Mtg. - Spec. A Only



**AIR CLEANER GROUP**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	140A343	1	Cleaner, Air - Oil Bath Type, Spec. A (Repl. 140C266)
2	140D355	1	Housing, Mesh Type - Spec. B through F
2A	140D531	1	Housing, Cart. Type - Begin Spec. G
3	140B356	1	Cover, Mesh Type - Spec. B through F
3A	140B532	1	Cover, Cart. Type - Begin Spec. G
4	520A75	2	Stud, Mesh Type - Spec. B through F

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
4A	518-56	2	Screw, Cart. Type - Begin Spec. G
5	140-359	1	Element, Mesh Type - Spec. B through F
5A	140B495	1	Cartridge & Wrapper, Begin Spec. G (Note: Wrapper not sold separately.)
6	517-9	1	Plug, Button - Spec. B through F
7	140B467	1	Gasket, Spec. B through F (Repl. 508-73)
8	140A357	1	Inlet, Carb. Air (Metal) Spec. B through H - Order 145A239 Rub. Inlet, 145A246 Bushing, 503P368 Clamp
8A	145A239	1	Inlet, Carb. (Air Horn) Rubber Begin Spec. J
8B	145A246	1	Bushing, Carb. Air Inlet for Rubber Inlet - Begin Spec. J
9	503B402	1	Hose, Air Clnr. to Carb. - Begin Spec. B (Repl. 503A263 & 503B42)
10	CLAMP, HOSE		
	503-274	1	Air Clnr. Hose to Carb. Inlet Metal Inlet to Carb. - Spec. B through H
	503-274	1	Clamp, Hose - Rubber Inlet to Carb., Begin Spec. J
10A	503A368	1	Tube, Air Pre-heater - Spec. A (1), Begin Spec. B (2)
11	133A32	1 or 2	Hose, Air Pre-heater - Begin Spec. B
12	503-259	1	Hose, Air Pre-heater - Spec. A
13	503A215	1	Pre-Heater Kit, Air - Spec. A (Incl. Air Adapter, Hose, Clamps & Tube)
14	133K30	1	Clamp, Hose - (2) Air Pre-heater Hose, (1) Air Clnr. Hose to Air Clnr.)
15	503-269	3	Hose, Breather Cap to Air Inlet (3-1/8") Begin Spec. B (See Also Optional Fuel System Group) Spec. A
16	503A275	1	Tube, Breather Cap to Air Clnr. (See Also Optional Fuel System Group) Spec. A
17	123A411	1	Grommet, Rubber - Air Clnr. (For 11/32" Hole) Spec. B Through F
	508-31	1	



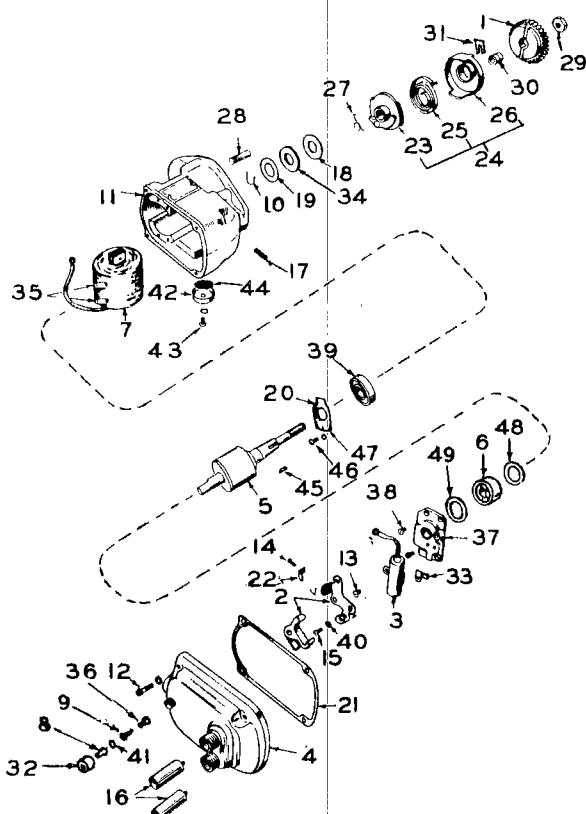
**IGNITION GROUP**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	I61C238	1	Magneto, Incl. Gear, Less Stop Button (Repl. I61A148)
2	I60B339	1	Gear, Magneto Drive
3	I60A124	1	Gasket, Magneto Mtg.
4	I61P152	1	Button, Stop - Key 1,3
5	CABLE, SPARK PLUG - RIGHT HAND		
6	I67A1213	1	Shielded, Key 1,2,3,4,6
7	I67A1277	1	Unshielded, Incl. Seal, Key 5,6
6	CABLE, SPARK PLUG - LEFT HAND		
8	I67A1214	1	Shielded, Key 1,2,3,4,6
9	I67A1278	1	Unshielded, Incl. Seal, Key 5,6
7	I67-34	2	Plug, Spark (Repl. 167-35)
8	166-105	2	Nipple, Spark Plug
9	I67A41	2	Shield, Spark Plug
10	I67A57	2	Nut, Coupling - Spk. Plg. Cables to Magneto
	I67-19	2	Seal, Rubber - Spk. Plg. Cable to Magneto - Key 5,6

MAGNETO PARTS GROUP (Type FM-PEI)

Note: These parts are for type FM-PEI-2B69A magneto. Be sure to check magneto nameplate for type before ordering replacement parts.

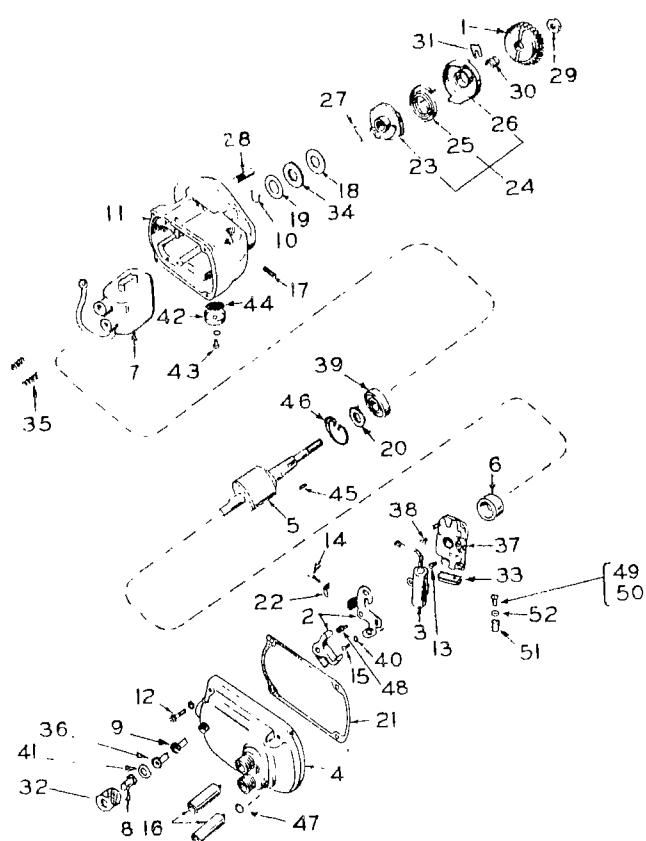
<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>
	161C238	1	Magneto Assy., Incl. Dr. Gr., (Repl. 161A148)
1	160B339	1	Gear, Mag. Drive
2	161-242	1	Point Set, incl. Arm & Stationary Brkt.
3	161A178	1	Condenser, Magneto
4	161P210	1	Cap, End
5	161P212	1	Rotor Assy., Magnetic
6	161P217	1	Bearing, Roller - Rotor Cam End
7	161P211	1	Coil, Magneto
8	161A11	1	Ferrule, Grd. Term.
9	161P118	1	Insulator, Grd. Term.
10	161-19	1	Ring, Drive Shaft Snap
11	161-236	1	Housing, Magneto
12	161-120	4	Screw, End Cap (10-24 x 5/8")
13	161P224	1	Screw, Condenser Mtg. (8-32 x 1/4")
14	161P223	1	Screw & Lockwasher, Brkr. Arm Term.
15	161P231	1	Screw & Lockwasher, Contact Support Locking (8-32 x 5/16")
16	161P123	2	Outlet, High Tension Cable
17	161P226	2	Set Screw, Coil Bridge
18	161-128	1	Washer, Rotor Dr. End Seal (Outer)
19	161P213	1	Washer, Rotor Dr. End Seal (Inner)
20	161P214	1	Washer, Rotor Dr. End Brg. Retaining
21	161P215	1	Gasket, End Cap to Hsg.
22	161-136	1	Spring, Contact Support Grd.
23	161-170	1	Hub, Coupling
24	161-243	1	Coupling Assy., Impulse - Incl. 23, 25, 26
25	161-51	1	Spring, Impulse Cplg. Dr.
26	161-131	1	Shell, Impulse Cplg.
27	161-96	1	Spring, Impulse Cplg. Pawl
28	161-172	1	Pin, Impulse Cplg. Pawl Stop (3/8-16)
29	161-53	1	Nut, Impulse Coupling
30	161-135	1	Bushing, Impulse Coupling
31	161-240	1	Washer, Coupling Plate
32	161P164	1	Nut, Ground Cable
33	161P230	1	Wick & Holder, Cam
34	161-62	1	Seal, Rotor Drive End
35	161-186	1	Spring, Coil Lead
36	161-119	1	Terminal Ground Cable
37	161P216	1	Support, Bearing
38	814-77	4	Screw, Brg. Support (8-32 x 3/8")
39	161P71	1	Bearing, Rotor Drive End
40	526-3	1	Washer, Contact Support Locking Screw Plate
41	161A79	1	Washer, Ground Terminal
42	161P219	1	Cover, Vent
43	161P220	1	Screw, Vent Cover (6-32 x 1/4")
44	161P221	1	Screen, Vent
45	515-1	1	Key, Rotor Shaft to Impulse Cplg.
46	161-244	1	Screw, Rotor Dr. End Brg. Washer (8-32 x 3/8")
47	850-25	1	Lockwasher, Brg. Retainer Screw
48	161P232	1	Washer, Brg. Support Grease Retaining (Outer)
49	161P213	1	Washer, Brg. Support Grease Retaining (Inner)

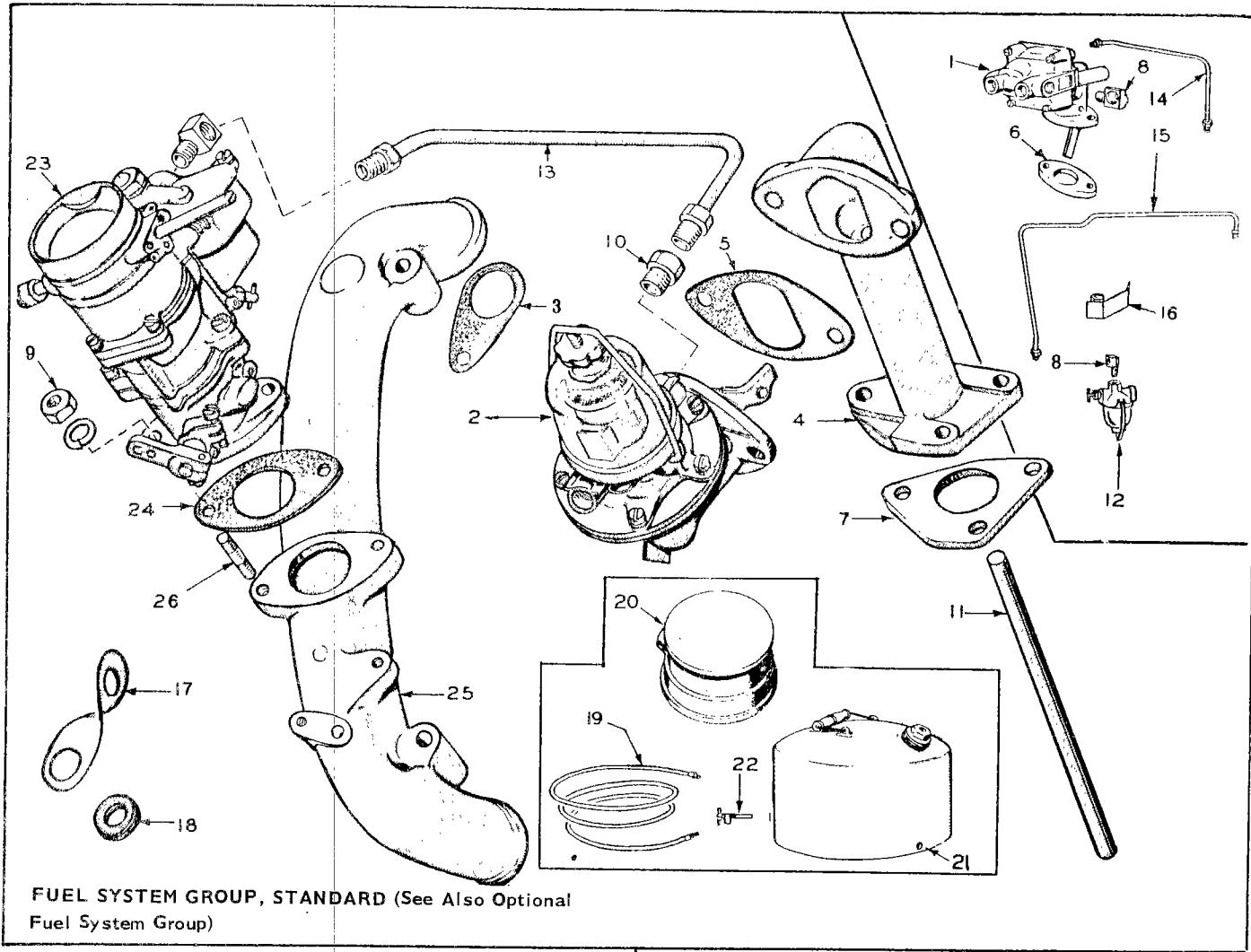


**MAGNETO PARTS GROUP (Type FM-JE I)**

Note: These parts are for type FM-JEI-2B69A magneto. Be sure to check magneto nameplate for type before ordering parts.

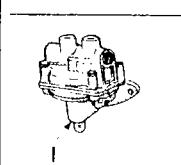
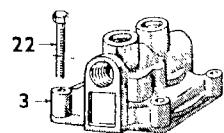
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	160B339	1	Magneto Assy., Incl. Dr. Gr. (Order 161C238)
2	161-86	1	Gear, Magneto Drive
3	161A178	1	Point Set, Contact
4	161P210	1	Condenser Magneto
5	161-169	1	Cap, End
6	161-72	1	Rotor Assy., Magnetic
7	161-168	1	Bearing, Rotor Cam End
8	161A11	1	Coil, Magneto
9	161P118	1	Ferrule, Primary Grd.
10	161-19	1	Insulator, Primary Grd. Term.
11	161-236	1	Ring, Rotor Shaft Snap
12	161-120	4	Housing, Magneto
13	161P225	1	Screw, End Cap (10-24 x 5/8")
14	161P225	1	Screw, Condenser Mtg. (8-32 x 3/8")
15	161P225	2	Screw & Lockwasher, Brkr. Arm Term. (8-32 x 3/8")
16	161P123	2	Screw & Lockwasher, Contact Support Locking (8-32 x 3/8")
17	161-239	2	Outlet, High Tension Cable
18	161-128	1	Set Screw, Coil Bridge
19	161P213	1	Washer, Rotor Dr. End Seal (Outer)
20	161-56	As Req.	Washer, Rotor Dr. End Seal (Inner)
21	161A42	1	Shim, Rotor Dr. End Brg.
22	161-136	1	Gasket, End Cap to Hsg.
23	161-170	1	Spring, Ground Switch
24	161-171	1	Hub, Coupling
25	161-51	1	Coupling Assy., Impulse - Incl. 23, 25, 26
26	161-175	1	Spring, Impulse Cplg. Dr.
27	161-96	1	Shell, Impulse Cplg.
28	161-172	1	Spring, Impulse Cplg. Pawl Pin, Impulse Cplg. Pawl Stop (3/8-16)
29	161-53	1	Nut, Impulse Coupling
30	161-135	1	Bushing, Impulse Coupling
31	161-240	1	Washer, Coupling Plate
32	161P164	1	Nut, Ground Cable
33	161-112	1	Wick & Holder, Cam
34	161-62	1	Seal, Rotor Drive End
35	161-186	2	Spring, Coil Lead
36	161-119	1	Terminal, Ground Cable
37	161-173	1	Support, Bearing
38	814-77	4	Screw, Brg. Support (8-32 x 3/8")
39	161P71	1	Bearing, Rotor Drive End
40	526-3	2	Washer, Contact Support Locking Screw Plate
41	161A79	1	Washer, Grd. Term.
42	161A219	1	Cover, Vent
43	161P220	1	Screw, Vent Cover (6-32 x 1/4")
44	161P221	1	Screen, Vent
45	515-1	1	Key, Rotor Shaft to Impulse Coupling
46	161-18	1	Ring, Rotor Bearing Snap
47	161-241	1	Washer, End Cap Plate
48	161-35	1	Screw, Contact Support Adj.
49	812-61	1	Screw, Cam Wick (6-32 x 3/8")
50	161-116	1	Lockwasher, Cam Wick Screw
51	161-113	1	Spacer, Cam Wick
52	161-114	1	Washer, Cam Wick





FUEL SYSTEM GROUP, STANDARD (See Also Optional  
Fuel System Group)

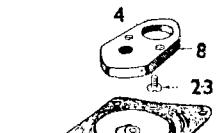
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	I49D693	1	Pump, Fuel Spec. A (Repl. I49C405 & I49C559)	17	I59A477	1	Bracket, FI. Line Support - Begin Spec. B
2	PUMP, FUEL - BEGIN SPEC. B I49C567	1	Without Priming Lever - Key 2,4,5,6	18	508-21	1	Grommet, Rubber - FI. Line Support Brkt. - Begin Spec. B
3	I49C530	1	With Priming Lever - Key 1,3	19	501A27	1	Line, FI Tank to Plant.
4	I54A252	2	Gasket, Intake Man. Mtg.	20	415A124	1	Cap, Rain --Rubber
4	I49C528	1	Adapter, FI. Pump - Begin Spec. B	21	415B126	1	Tank, FI. (5-Gal.) - Repl. 415A10
5	I49A277	1	Gasket, Fuel Pump to Adapter Begin Spec. B	22	504A13	1	Valve, Shut Off - FI. Tank
6	I49A388	1	Spacer, FI. Pump Mtg. - Spec. A	23	CARBURETOR - GASOLINE I41C560	1	CARBURETOR - GASOLINE Key 1,2
7	I49A520	1	Spacer, FI. Pump Adapter Mtg. - Begin Spec. B	141C564	1	Key 3,5 (Also Key 4,6 - To Spec. F)	
8	502-2	As Req.	Elbow, Fuel Line Connection Spec. A (3), Begin Spec. B (2)	141C621	1	Key 4,6 - Spec. F through K	
9	868-3	2	Nut, Carburetor Stud	141C655	1	Key 4 - Begin Spec. L	
10	502-3	1	Connector, FI. Line - FI. Pump Out. - Begin Spec. B	154A133	1	Gasket, Carb. to Manifold	
11	I49A519	1	Rod, Push - FI. Pump Adapter Begin Spec. B	24	MANIFOLD, INTAKE I54D253	1	Key 1,2 - Spec. A (Note: Also for Key 4, X-RAY Only -Spec. A)
12	I49B79	1	Filter, Fuel - Spec. B to Serial 508834	154D314	1	Key 1,2-Begin Spec. B (Note: Also for Key 4, X-RAY Only - Begin Spec. B)	
LINE, FUEL - PUMP TO CARBURETOR				154A266	1	Key 3,4 - Spec. A (Note: For Key 4, X-Ray Only - Use 154D253)	
13	I49A533	1	Begin Spec. B	154D315	1	Key 3,4,5,6 - Begin Spec. B (Note: For Key 4, X-RAY Only Use 154D314)	
14	I49B403	1	Spec. A	26	800-52	2	Screw, Hex Hd. Mach. - Carb. to Man. (3/8-16 x 1-1/2) - Repl. 520A311
15	I59B407	1	Line, Fuel - Supply Con. to FI. Pump In. - Spec. A				
16	I49A171	1	Bracket, FI. Supply Con. - Spec. A				

**FUEL PUMP PARTS GROUP**

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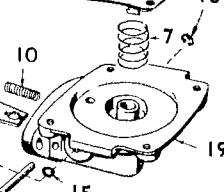
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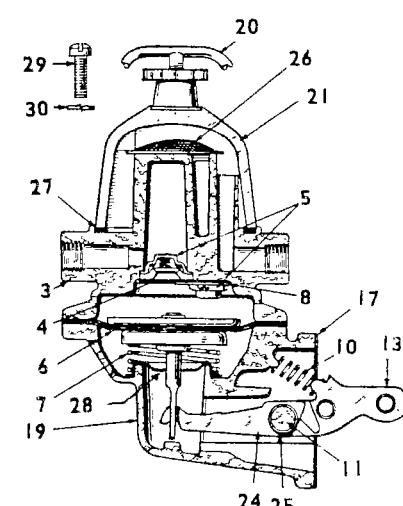
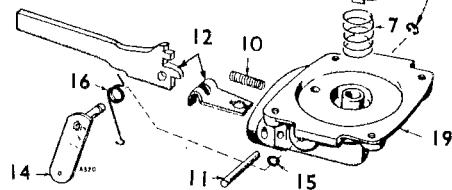
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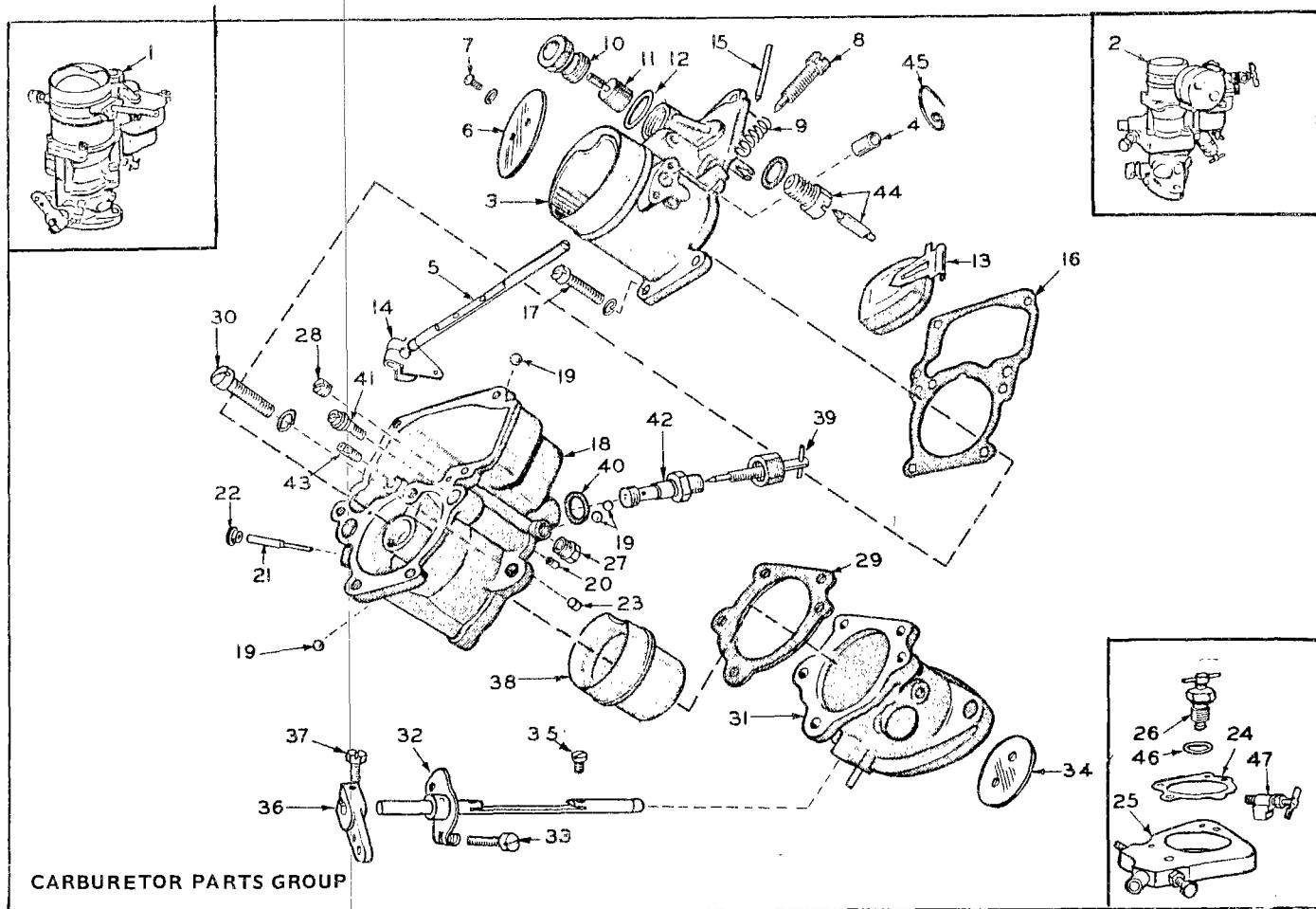
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<b>REF. NO.</b>	<b>PART NO.</b>	<b>QTY. USED</b>	<b>PART DESCRIPTIONS</b>
1	149D693	1	Pump, Fuel - Spec. A (Repl. Blaking Mfr. Pump)
2	PUMP, FUEL - BEGIN SPEC. B		
	149C530	1	Key 1,3 (With Priming Lever)
	149C567	1	Key 2,4,5,6 (Less Priming Lever)
3			Body, Upper (Note Sold Separately)
4	149A96	2	*Valve & Cage
5	149A95	2	*Gasket, Valve
6	DIA PHRAGM & PULL ROD		
	149A582	1	**Spec. A
	149P276	1	£Begin Spec. B
7	SPRING, DIAPHRAGM		
	149A672	1	**Spec. A (Repl. 149A93)
	149P576	1	Begin Spec. B
8	RETAINER, VALVE		
	149A539	1	Spec. A (Repl. 149A84)
	149P575	1	Begin Spec. B
9	149A159	2	**Gasket, Valve Ret. - Spec. A (Blaking Mfr. Pump Only)
10	SPRING, ROCKER ARM		
	149A675	1	** Spec. A (Repl. 149A94)
	149P580	1	Begin Spec. B
11	PIN, ROCKER ARM		
	516A113	1	Spec. A (Repl. 516A25)
	149P578	1	Begin Spec. B
12	149-710	1	Arm & Link Set, Rocker (Sold only as a set) Spec. A
13	149P581	1	Arm, Rocker - Begin Spec. B
14	149A551	1	Lever, Primer - Spec. A (Onan Mfr. Pump Only)
15	509-65	2	Seal, O-ring - Primer Lever - Spec. A (Onan Mfr. Pump Only)
16	149A404	1	Spring, Priming Lever - Spec. A (Onan Mfr. Pump Only)
17	GASKET, MOUNTING		
	149A3	2	**Spec. A (Pump & Spacer Mtg.)
	149A277	1	£Begin Spec. B
18	518-129	1	Ring, E Retainer - Priming Lever Shaft - Spec. A (Onan Mfr. Pump Only)
19		1	Body, Lower (Not Sold Separately)
20	149P573	1	Bail, Bowl Retainer - Begin Spec. B
21	149A481	1	Bowl, Strainer - Begin Spec. B
22	815-148	4	Screw, Pump Assy., Spec. A
23	815-147	2	Screw, Valve Retainer, Spec. A
24	149P579	1	Link, Rocker Arm - Begin Spec. B
25	149P577	1	Bushing, Rocker Arm Pin - Begin Spec. B
26	149P483	1	Screen, Strainer - Begin Spec. B
27	149A275	1	£Gasket, Bowl - Begin Spec. B
28	149P793	1	£Seal, Diaphragm Pull Rod - Begin Spec. B - Note: Req. to maintain crankcase vacuum with pumps having lower body vent hole.
29	815-135	6	Screw, Body
30	850-30	6	Lockwasher, Body Screw
	REPAIR PARTS KIT, FUEL PUMP		
	149K526	1	Spec. A + Incl. Parts Marked * & **.
	149K106	1	Begin Spec. B - Incl. Parts Marked £ & *

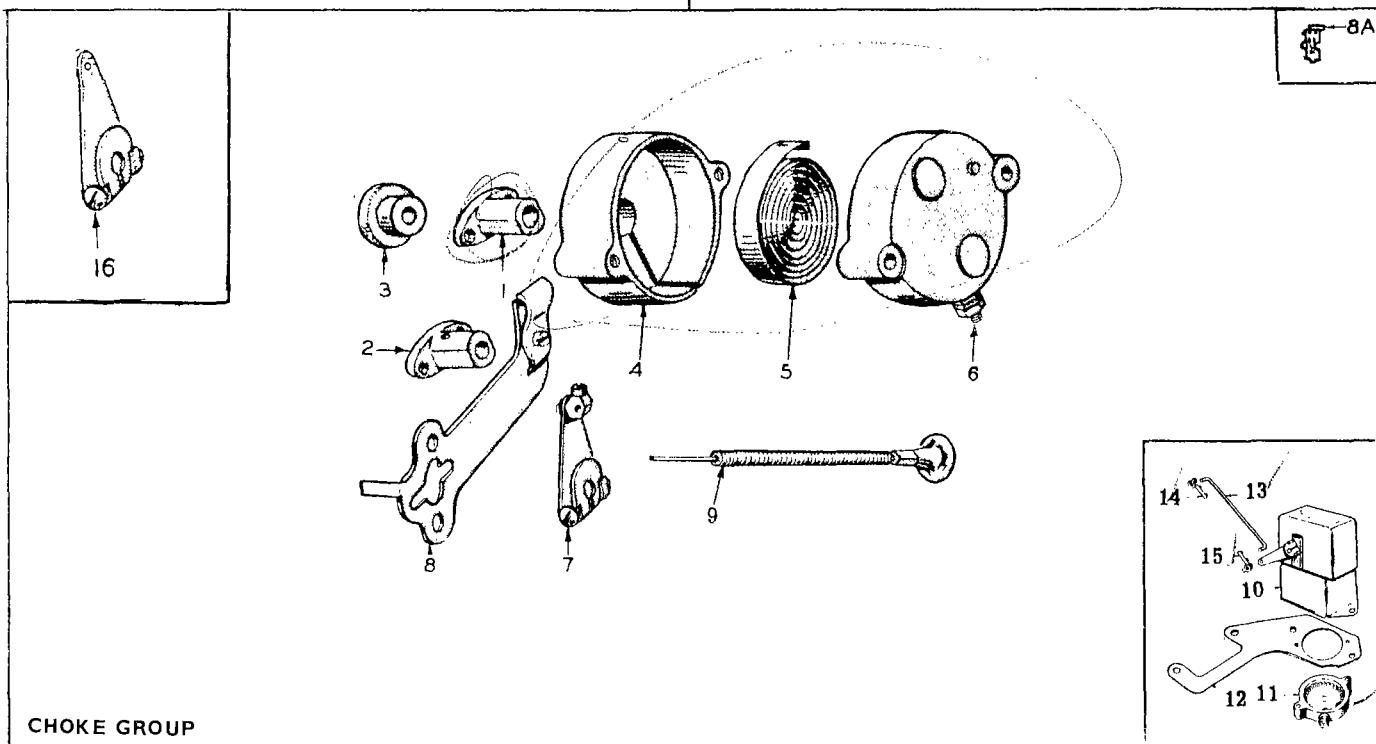
Note: All parts listed for Begin Spec. B Mdl's, are for AC Mfr. Pump only. Carter Mfr. Pump (used during Spec. B prior to serial 508834) parts are not available, use pump assembly 149C567.



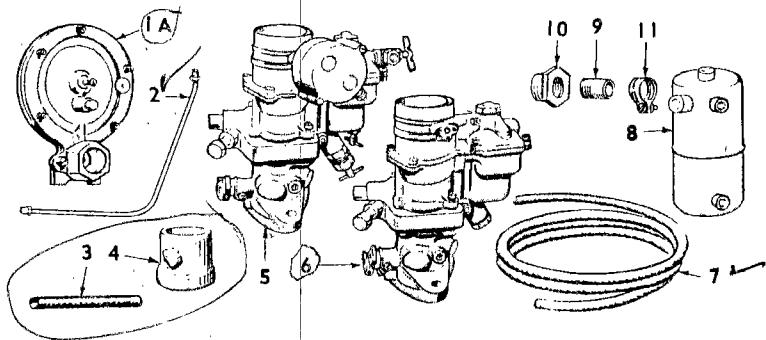
CARBURETOR PARTS GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	CARBURETOR - GASOLINE 141C560 141C564 141C621 141C655	1 1 1 1	Key 1,2 Key 3,5 (Also Key 4,6 To Spec. F) Key 4,6 - Spec. F Through K Key 4 - Begin Spec. L	14	153A214	1	Arm, Choke Shaft - Key 4,6 - Begin Spec. F
2	CARBURETOR - OPTIONAL FUEL 141C492 141C494 141C622 141C656 141C562 141C519	1 1 1 1 1 1	Gas-Gasoline - Key 2 Gas-Gasoline - Key 4 - To Spec. F Gas-Gasoline - Key 4,6 - Spec. F Through K Gas-Gasoline - Key 4 - Begin Spec. L Gas (Only) - Key 2 Gas (Only), Key 4,6	15	141-72	1	Axle, Float
3	BODY, AIR INTAKE - INCL. CHOKE SHAFT BUSH. 141-530 141-666	1 1	To Spec. L Begin Spec. L	16	141-536	1	Gasket, Intake to Bowl
4	141-531	1	Bushing, Choke Shaft - To Spec. L	17	141-537	6	Screw, Intake to Bowl
5	SHAFT, CHOKE 141A478 141-624	1 1	Key 1,2,3,5 (Also Key 4,6 - To Spec. F) Key 4,6 - Begin Spec. F	18	141-538	1	Bowl, Fuel - Incl. Ref. 19 through 23
6	PLATE, CHOKE 141-532 141-667	1 1	To Spec. L Begin Spec. L	19	141-539	4	Plug, Lead - Bowl Passages
7	141-471	2	Screw, Choke Plate	20	141-540	1	Bushing, Idle Channel
8	141-8	1	Needle, Idle Adjusting	21	141-541	1	Jet, Blank - Accelerator
9	141-9	1	Spring, Idle Needle	22	141-542	1	Plug, Jet Channel - Accelerator
10	141-533	1	Plug, Fuel Filter Head	23	141-543	1	Plug, Accelerator Pump Rod Channel
11	141-566	1	Filter, Fuel Inlet	24	148A198	1	Gasket, Gas Adapter - Gas or Gas-Gasoline Carb. Only
12	141-534	1	Washer, Gasket - Filter Plug	25	148B197	1	Adapter, Gas Fuel - Gas or Gas-Gasoline Carb. Only
13	FLOAT 141-535 141A493	1 1 1	Gasoline Carburetor Gas-Gasoline Carb.	26	148A135	1	Lock, Float - Gas-Gasoline Carb. Only (Not needed replace with pipe plug.)
				27	141-70	1	Plug, Bowl Drain
				28	141-544	1	Plug, Power Jet Channel
				29	141-545	1	Gasket, Bowl to Throttle Body
				30	141-546	2	Screw, Bowl to Body
				31	141-585	1	Body, Throttle (Incl. Shaft, Plate & Brgs.)
				32	141K586	1	Shaft & Lever Kit, Throttle - Incl. Stop Screw
				33	815-133	1	Screw, Lever Stop
				34	141-551	1	Plate, Throttle
				35	141-257	2	Screw, Throttle Plate
				36	141-552	1	Lever, Clamp - Throttle
				37	141-2	1	Screw, Throttle Lever Clamp
				38	VENTURI 141-484	1	Key 1,2 - Gasoline Carb.

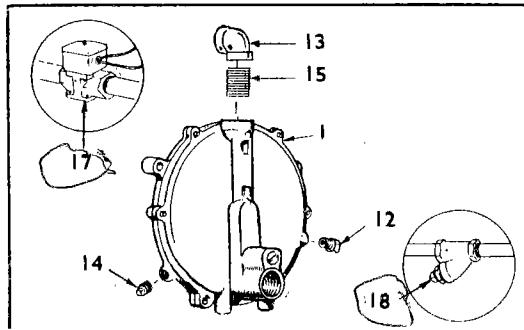
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION
	141P573	1	Key 3,4,5,6 - Gasoline Carb.	45	141A501	1	Spring, Choke Stop - Gas-Gasoline Carb.
	148A195	1	Key 2 - Gas or Gas-Gasoline Carb.	46	148A17	1	Gasket, Float Lock Bushing - Gas-Gasoline Carb.
	148A196	1	Key 4,6 - Gas or Gas-Gasoline Carb.	47	504-7	1	Valve, Gasoline In. Shut-off Key 2,4,6 - Gas-Gasoline Carb.
39	141-553	1	Jet & Adj. Needle Assy., Main		141P590	1	Kit, Repair - Throttle Body
40	141A77	2	Washer, Main Adj. Needle & Fuel Valve				Needle Bearing - Incl. Seal & Washer
41	141-554	1	Jet, Idle		141-563	1	Kit, Repair - Carb.
42	141-555	1	Jet, Discharge		141-529	1	Kit, Gasket - Carb.
43	141-556	1	Jet, Well Vent				
44	141-323	1	Valve, Fuel Inlet				



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PARTS NO.	QTY. USED	PARTS DESCRIPTION
1	153A155	1	Adapter, Choke - For Gasoline (Only) Carb. - Key 2,5 (Also Key 4,6 - To Spec. F)	9	ROD, CHOKE CONTROL		
2	141A502	1	Adapter, Choke - For Opt. Gas-Gasoline Carb. - Key 2,4,5, - To Spec. L (Note: Used only as choke lock for Key 4 Spec. F through K)	10	141A497	1	Key 1,3
3	141A372	1	Knob, Choke Shaft - Key 2,5 (Also Key 4 - To Spec. F)	10	153A18	1	Key 6
4	153A58	1	*Housing, Choke Bimetal - Key 2,5, (Also Key 4,6 - To Spec. F)	10	CHOKE, AUTOMATIC - SISSON - KEY 4,6		
5	153-57	1	*Element, Bimetal - Key 2,5 (Also Key 4,6 - To Spec. F)	10	153P213	1	Spec. F through K
6	COVER, CHOKE - INCLUDES HEATING ELEMENT			10	153A337	1	Begin Spec. L
	153A162	1	*28-Volt - Key 2 (Also Key 4,6 To Spec. F)	11	153A346	1	Cover, Choke - Incl. Htg. Element, Key 4,6, Begin Spec. F (Repl. 153A256)
7	153A50	1	6-Volt - Key 5	12	153A252	1	Bracket, Auto. Choke - Key 4,6 - Begin Spec. F
	LEVER, CHOKE SHAFT			13	LINKAGE, AUTOMATIC CHOKE - KEY 4,6		
	145A60	1	Key 1,3	13	153A253	1	Gasoline (Only) Carb. - To Spec. L
	145-172	1	Key 6	13	153A344	1	Gasoline (Only) Carb. - Begin Spec. L
8	BRACKET, CHOKE CONTROL ROD - KEY 1,3,6			13	153A254	1	Optional Gas-Gasoline Carb. To Spec. L
	141A496		To Spec. L	13	153A343	1	Optional Gas-Gasoline Carb. Begin Spec. L
	153A347	1	Begin Spec. L	14	CLIP, END - CHOKE LINKAGE - KEY 4,6 - BEGIN SPEC. F		
8A	518P176	1	Clip, Choke Rod to Brkt. - Key 1,3 Begin Spec. L	14	518-5	1	Carburetor End
				15	518-47	1	Choke End
				16	153A214	1	Arm, Choke Shaft - Key 6 - Begin Spec. F

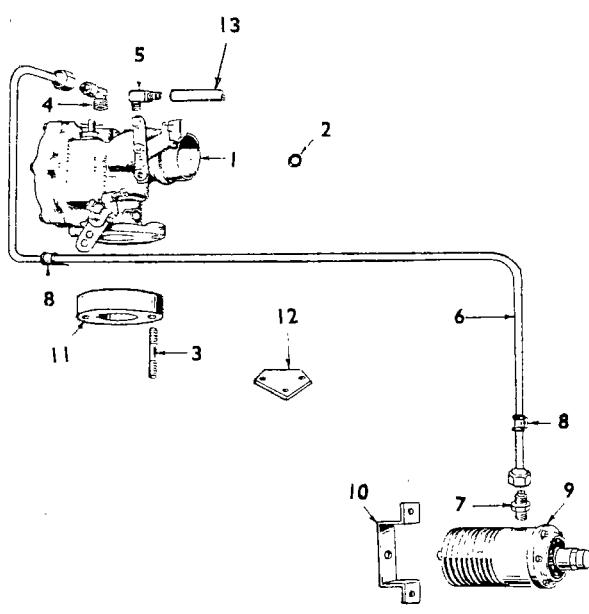


**OPTIONAL FUEL SYSTEM GROUP**  
(Combination Gas-Gasoline or Gas Only, Downdraft Carburetor)



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION
1	148C311	1	REGULATOR, GAS (Check Reg. Nameplate for Manufacturer. Order Parts Accordingly) 148A428	7	503-51	1	Hose, Gas Reg. to Carb. (42")
			Garretson Manufacture - Used Begin Serial 573571 - Key 2,4,6	8	159B294	1	Tank, Reservoir - Gravity Feed - Gasoline - Key 2,4
IA	148A428	1	Ensign Manufacture - Used Prior Serial 573571 - Repl. 148A9 - Key 2,4	9	505-135	1	Nipple, Half - Gas Reg. Out. Key 2,4
2	149B431	1	LINE, GASOLINE - PUMP TO CARB. - GAS-GASOLINE MDLS. - KEY 2,4,6	10	505-131	1	Bushing, Gas Reg. Out., Use with Ensign Reg. Only) - Key 2,4
	149A533	1	Spec. A	11	CLAMP, GAS HOSE (Note: The O.D. of the Gas Fuel Hose varies, select appropriate clamps.)		
3	123A412	1	Begin Spec. B	503-27	2	3/4" O.D. Hose	
	503A267	1	Key 2 - Spec. A	503-32	2	7/8" O.D. Hose	
	123A415	1	Key 2 - Begin Spec. B (Use with Ensign Reg. Only)	503-49	2	15/16" O.D. Hose	
	503A266	1	Key 4 - Spec. A	12	148A107	1	Vent (Use with Garretson Reg. Only)
	503A275	1	Key 4 - Begin Spec. B (Use with Ensign Reg. Only)	13	505-39	1	Elbow, Pipe - 3/8" (Used with Garretson Reg. Only) - Key 2,4
	503A318	1	Key 4,6 - Spec. B Through E (Use with Garretson Reg. Only)	14	505-57	1	Plug, Pipe - 1/8" - Gas Reg. Key 2,4
4	148A214	1	Key 4,6 - Begin Spec. F (Use with Garretson Reg. Only)	15	505-101	1	Nipple, Pipe - 3/8" x 1" (Used with Garretson Reg. Only) Key 2,4
	141C492	1	Choke, Gas Fuel - Key 4 (Use with Ensign Reg. Only)	17	307P312	1	Valve, Sol. - Gaseous Fuel - Key 2,4
5	141C494	1	CARBURETOR - GAS-GASOLINE	18	149-558	1	Strainer, Gaseous Fuel - Key 2,4
	141C622	1	Key 2	148-300	1	Repair Kit, Gas Reg. (Ensign Model F)	
	141C656	1	Key 4 - To Spec. F	148-522	1	Repair Kit, Gas Reg. (Ensign Model FI)	
6	141C622	1	Key 4,6 - Spec. F through K	148-390	1	Repair Kit, Gas Regulator (Garretson)	
	141C562	1	Key 4 - Begin Spec. L	149A555	1	Cover, Crkcs. FI. Pump Hole (Gas Only)	
	141C519	1	Key 2				
			Key 4,6				

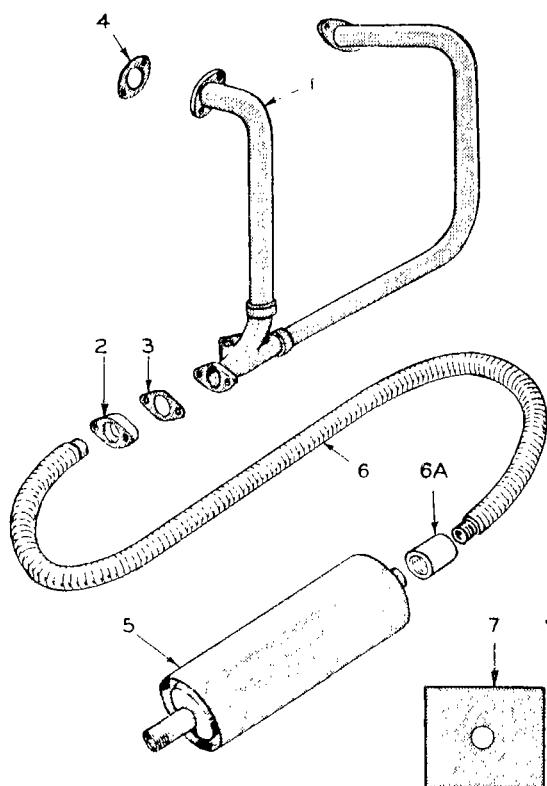
**OPTIONAL FUEL SYSTEM GROUP (Liquid Petroleum Gas Only)**

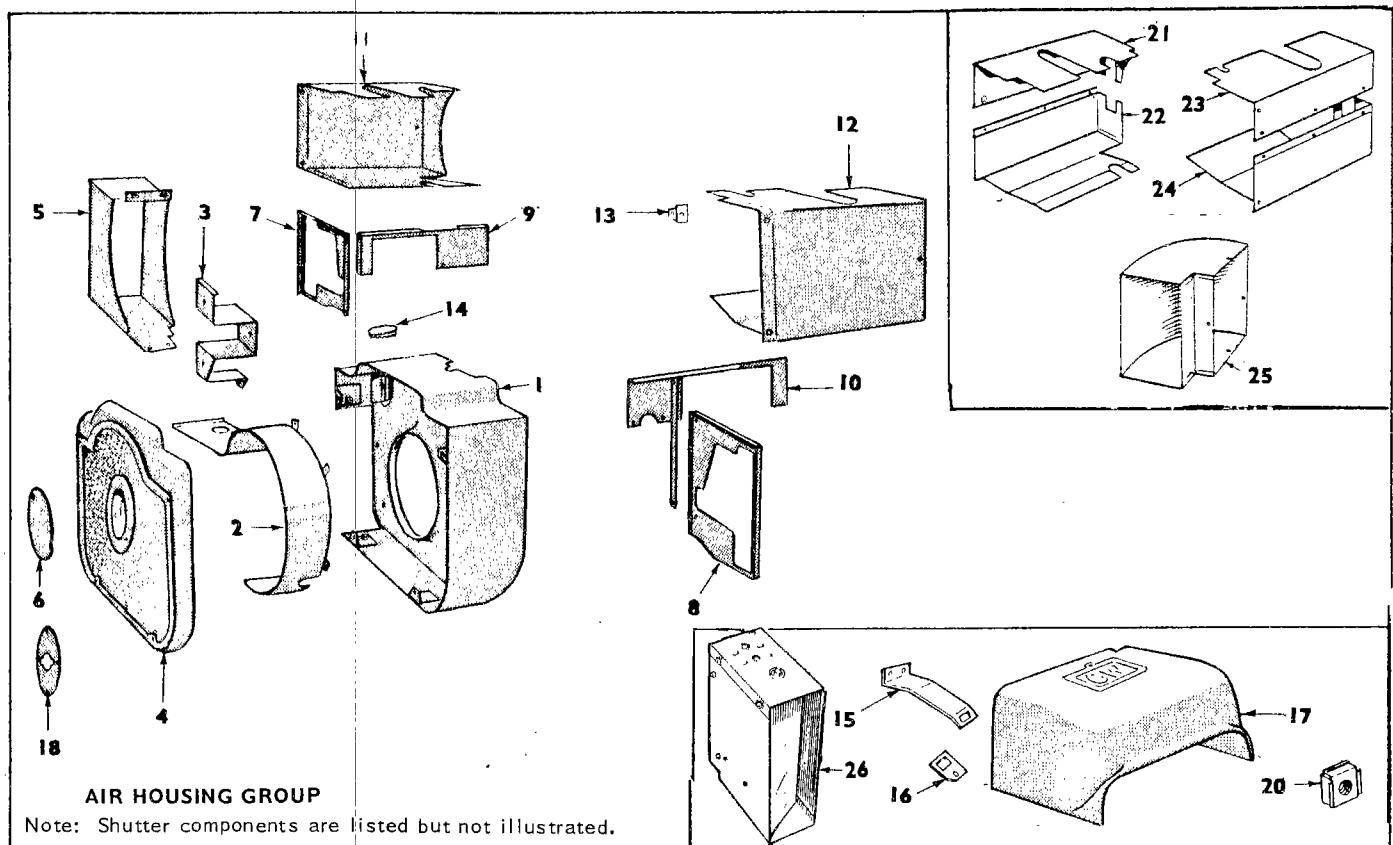


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
1	141B671	1	Carburetor, Pressure - LPG Fuel - Combination Carb. & Press. Reg. (Components Not Available) - Repl. 141B637)
2	Describe	1	Seal, Throttle Shaft (Zenith 50-CT48-9) - Component of Carb. 141B637 & 141B671
3	520A429	2	Stud, Carb. Mtg. (3/8 x 2-1/2")
4	502-230	1	Elbow, Carb. Fl. In. (3/8" Male Pipe Thrd. by 3/8" Tube)
5	502-138	1	Elbow, Breather Hose to Carb. Line, Fuel - Vapor. to Carb.
6	148C429	1	Union, Half - Vapor. Out. (1/4" Male Pipe Thrd. by 3/8" Tube)
7	502-231	1	Clip, Fuel Line to Eng. Vaporizer Assy. (Mts. on Blower Hsg. Frt.)
8	332-50	2	Bracket, Vapor. Mtg.
9	148A418	1	Spacer, Carb. to Intake Man. Cover, Crankcase Fuel Pump Hole
10	148A423	1	Tube, Breather (Rubber) - Air Cleaner
11	145A231	1	
12	149A555	1	
13	503A366	1	

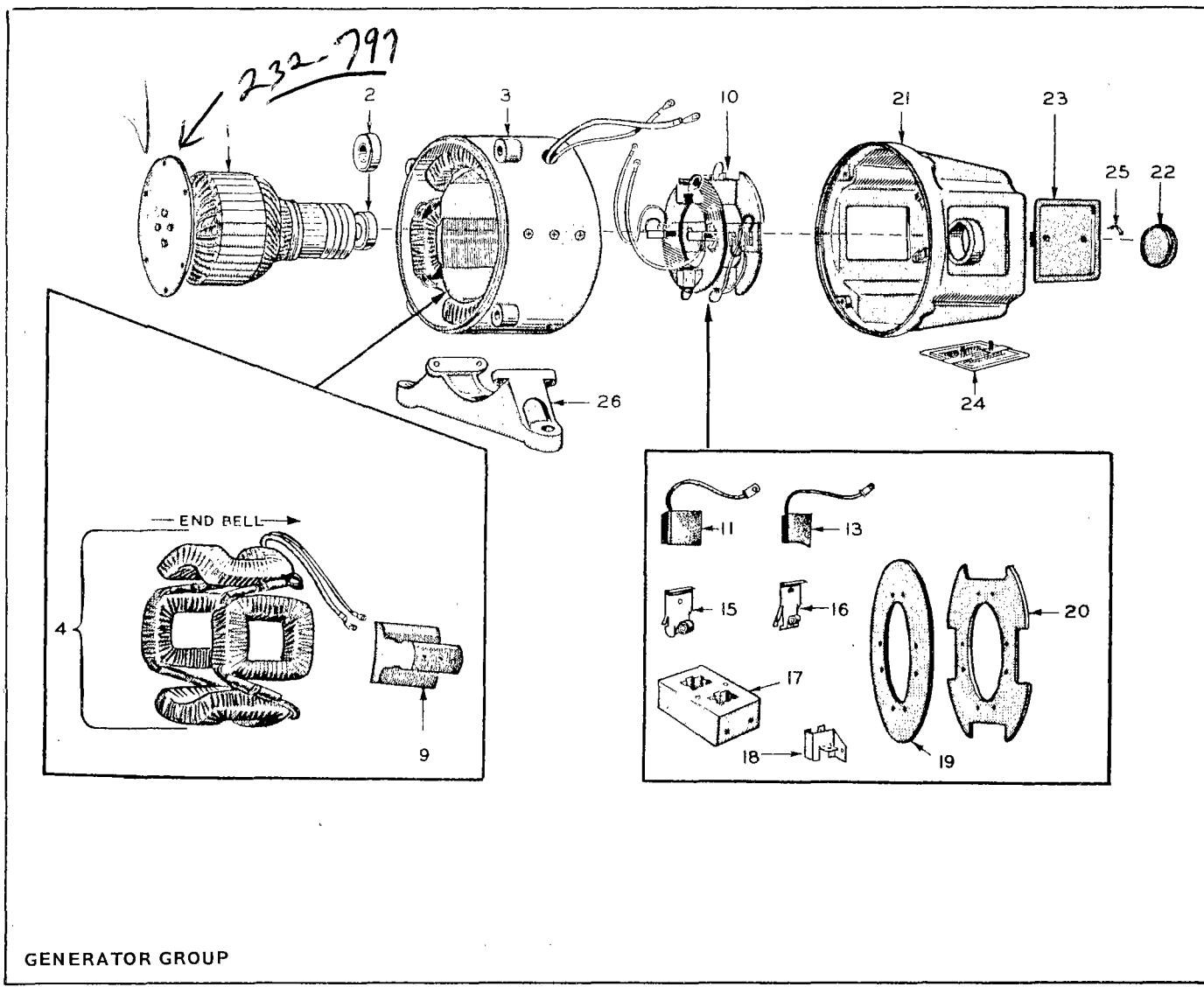
**EXHAUST GROUP**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS
<b>1 MANIFOLD, EXHAUST</b>			
	155C352	1	Horizontal Outlet, All Except Key 6 (Specs. 2203 & 2537)
	154D562	1	Vertical Down, Optional
	154C727	1	Key 6 (Spec. 2203 Only)
	154D761	1	Key 6 (Spec. 2537 Only)
2	155A170	1	Adapter, Exh. Man. Out.
3	154A133	1	Gasket, Exh. Adapter
4	155A343	2	Gasket, Exh. Manifold
5	155B77	1	Muffler, Exhaust
6	155B492	1	Tube, Exh. - Flexible
6A	505-31	1	Coupling, Pipe - Exh. Tube
7	155A294	1	Plate, Wall - Exh. Tube





<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>	<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PARTS DESCRIPTION</u>
1	HOUSING, BLOWER I34D394	1	Spec. A	16	CATCH, SHROUD FASTENER - SPEC. A ONLY I34A411	1	Right Hand Upper
	I34D462	1	Key 1,2,3,4,6 (Except Spec. 2537)		I34A410	1	Left Hand Upper
	I34D1228	1	Key 6 (Spec. 2537 Only)	17	I50C454	1	Cover, Gov. Arm - Spec. A Only
	I34D503	1	Key 5	18	I92B266	1	Plate, Crank Support - Begin Spec. C & Discontinued During Spec. G
2	SCROLL, BLOWER HOUSING I34D396	1	Key 1,2,3,4,5,6 (Except Spec. 2203)	20	NUT, SPEED GRIP (Blower Housing) 870-110	2	1/4-20, Thin
	I34A1095	1	Key 6 (Spec. 2203 Only)		870-111	2	1/4-20, Thick
3	I34B397	1	Grille, Air Outlet		870-114	4	5/16-18
4	PANEL, BLOWER HSG. FRONT - WITH INTE - GRAL CRANK GUIDE I34E999	1	All Except LPG Plts. & Key 6 (Spec. 2203 Only) - Repl. I34E408	21	I34C1218	1	Shroud, Cyl. - Upper L.H. - Key 6 (Spec. 2428 Only)
	I34B1020	1	LPG Plts. (With Prov. for Mtg. Vaporizer)	22	I34C1219	1	Shroud, Cyl. - Lower L.H. - Key 6 (Spec. 2428 Only)
	I34A1169	1	Key 6 (Spec. 2203 Only)	23	I34C1220	1	Shroud, Cyl. - Upper R.H. - Key 6 (Spec. 2428 Only)
5	I34D423	1	Adapter, Air Outlet	24	I34C1221	1	Shroud, Cyl. - Lower R.H. - Key 6 (Spec. 2428 Only)
6	I34B471	1	Cover, Crank Opening - Spec. B Only	25	I34C1208	1	Elbow, Air Outlet Adapter - Key 6 (Spec. 2428 Only)
7	I34B398	1	Plate, Baffle - L.H. Cyl.	26	I34C892	1	Shutter, Auto. - Air Discharge (Opt. Accessory) Repl. I34C884 - Applies Only to 6-1/2" Long Shutter Assy. Used After 1958 - Incl. Parts Marked * Plus Hdw.
8	I34B399	1	Plate, Baffle - R.H. Cyl.		I34D893	1	*Extension, Air Discharge Adapter
9	I34B402	1	Extension, L.H. Baffle Plate		I34C880	1	*Plate, Vernatherm Element Mtg.
10	I34B403	1	Extension, R.H. Baffle Plate		I34A885	1	*Shaft, Shutter & Pin Assy.
11	SHROUD, LEFT HAND CYLINDER I34B437	1	Spec. A - Incl. Fasteners		I34B660	1	*Bracket, Vernatherm Mtg.
	I34D458	1	Begin Spec. B		309P85	1	*Element, Vernatherm Power
12	SHROUD, RIGHT HAND CYLINDER I34B438	1	Spec. A - Incl. Fasteners		I34A656	1	*Spring, Vernatherm Element
	I34D459	1	Begin Spec. B, Key 1,2,3,4,6		I34A658	1	*Spring, Shutter
	I34D576	1	Key 5		309P77	1	*Switch, High Air Temp. Cutoff
13	I34A487	2	Bracket, Shroud - Begin Spec. B		I60A144	1	*Strap, Switch Grdg.
14	517-9	1	Plug, Button - Pre-Htr. Tube Air Out.		332-47	3	*Clip, Lead Securing
15	CATCH, SHROUD FASTENER - SPEC. A ONLY I34B414	1	Right Hand Lower		336A1090	1	*Lead, Switch to Stop Circuit
	I34A413	1	Left Hand Lower				

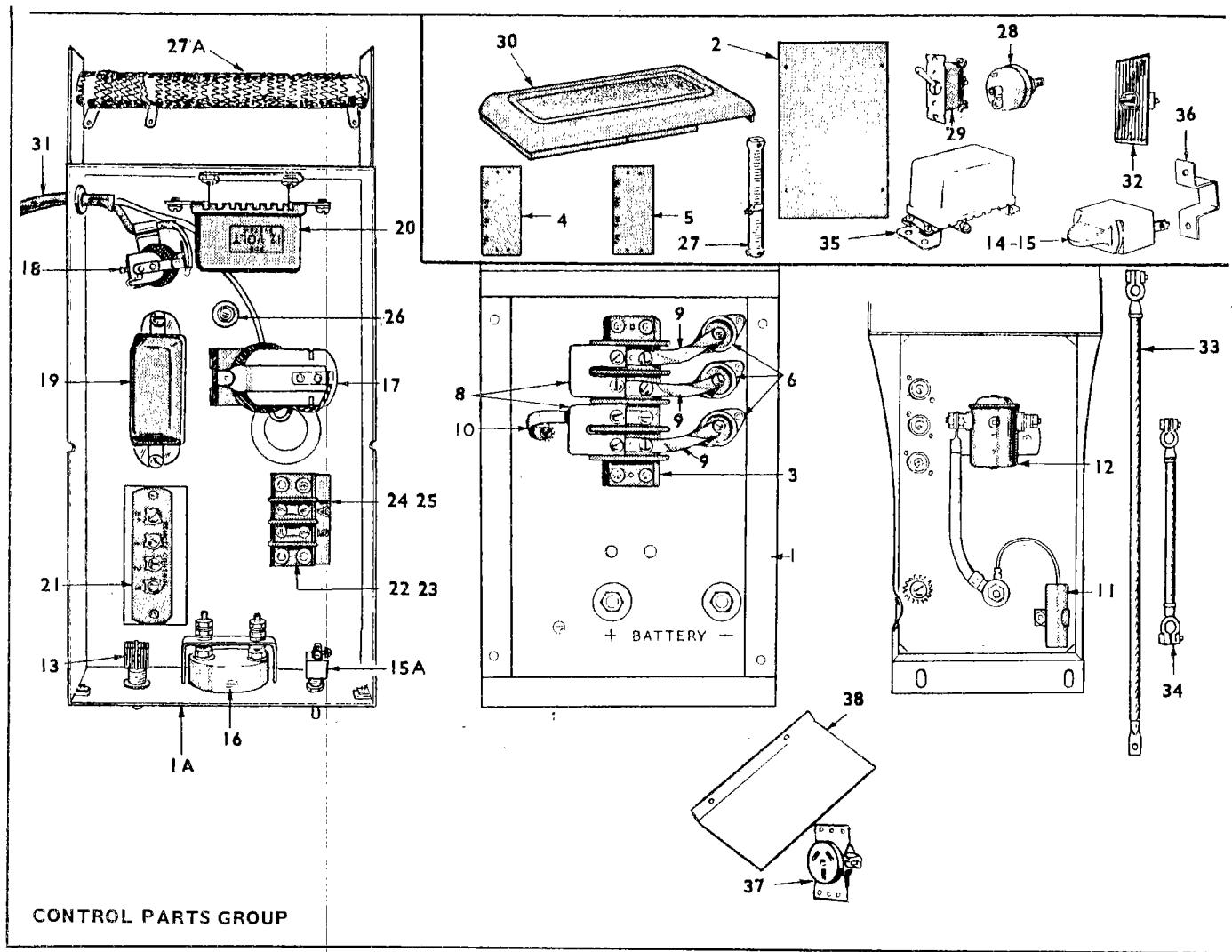


### GENERATOR GROUP

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>
1	*	1	Armature - Incl. Brg. & Drive Disc
2	510A52	1	Bearing, Ball - Armature (Repl. 510A2)
3	*	1	Frame - Machined & Drilled, Less Coils & Pole Shoes
4	*	1	Coil Set, Field - Set of 4
	*	1	Coil, Commutating (Interpole) Key 5
9	*	4	Shoe, Pole
10	*	1	Rig Assy., Brush - Incl. Brushes & Springs
11	BRUSH, COMMUTATOR -		
	214A45	4	Spec. A, Key 1,2,3,4
	214A57	4	Begin Spec. B, Key 1,2,3,4,6
	214A49	4	Key 5
13	BRUSH, COLLECTOR RING -		
	214A46	8	Spec. A
	214A54	8	Begin Spec. B (Some Plts. Use 6)
15	212B1106	4	Spring, Commutator Brush
16	212B1123	8	Spring, Coll. Ring Brush (Some Plts. Use 6)
17	212B1120	4	Block, Holder - Coll. Ring Brush
18	GUIDE, COMMUTATOR BRUSH		
	212A1121	4	Key 1,2,3,4,6
	212A1101	4	Key 5

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PARTS DESCRIPTION</u>
19	RING, INSULATOR - BRUSH GUIDE	1	Spec. A, All Key Nos.
213B106		1	Begin Spec. B, Key 1,2,3,4,6
213B116		1	Key 5
20	SPIDER, BRUSH RIG MOUNTING	1	Spec. A, All Key Nos.
212B1119		1	Begin Spec. B, Key 1,2,3,4,6
212B1138		1	
21	BELL, END	1	Spec. A, All Key Nos.
211D76		1	Begin Spec. B, Key 1,2,3,4,6 (Except Spec. 2206)
211D91		1	Key 5
211A140		1	Key 6 (Spec. 2206 Only)
22	COVER, BEARING	1	Key 1,2,3,4,6 (Except Spec. 2206)
232A601		1	
232A1031		1	Key 5 (Key 6, Spec. 2206 Only)
23	COVER, END BELL OPENING	1	
232B814		3	Key 1,2,3,4,6 - Top & Sides
232B1089		2	Key 5 - Top
232B1093		1	Key 5 - Lower Left
232B1162		1	Key 5 - Lower Right
24	232B841	1	Cover, End Bell Opening - Key 1,2,3,4,6 - Bottom
25	232A615	1	Clip, Bearing Stop
26	232C784	1	Support, Gen. Frame

\* - Order by part description, giving plant Model, Spec. and Serial Number.



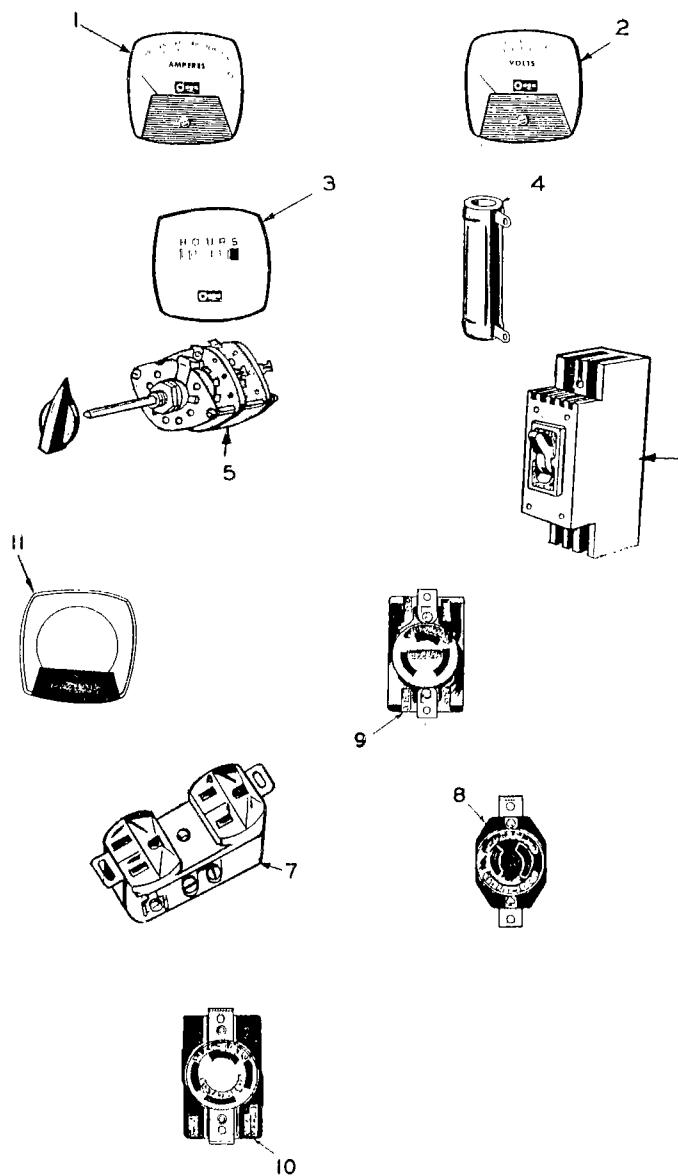
**CONTROL PARTS GROUP**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTIONS	REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION
1	BOX, CONTROL 301D857	1	Spec. A	10	332A464	1	Jumper, Term. to Grd., Key 1, 2,3,4,6
	301D990	1	Begin Spec. B Through D, Key 1,2,3,4	11	312A17	1	Condenser, Battery Pos. Term. - Key 1,2,3,4,6
1A	*	1	Key 6	12	307B40	1	Relay, Sol. - Start - Key 1,2, 3,4,6
	*	1	Panel, Control Box - Upper, Key 6	13	308-2	1	Switch, Hand or Elec. Start - Key 2,4,6
2	301B856	1	Cover, Control Box	14	308-26	1	SWITCH - START & STOP Key 2,4 - Spec. A
3	BLOCK, TERM., LOAD CONNECTION 332A254	1	Key 1,2 - To Spec. E (3-7/8")	15	308-90	1	Key 2,4,5,6 - Begin Spec. B (Mts. in Rect. Hole) - To Repl. Use 308A166
	332A419	1	Key 1,2 - Begin Spec. E, All Key 3,4,6 (6-1/4")	15A	308P154	1	Key 2,4,5,6 - Use Began During Spec. J (Mts. in Round Hole)
4	MARKER, TERMINAL BLOCK 332A435	1	Key 1,2 - To Spec. E (M1,M2, M3,M4)	16	AMMETER, CHARGE 302-58	1	Key 2,4,6
	332A434	1	Key 1,2 - To Spec. E (M1,M2, M3,M0)	17	302-60	1	Key 5
5	MARKER, TERMINAL BLOCK 332A437	1	Key 1,2 - Begin Spec. E, All Key 3,4,6 (M1,M2,M3,M4)	18	306A28	1	Relay, Start Disc., Key 2,4,6
	332A436	1	Key 1,2 - Begin Spec. E, All Key 3,4 (M1,M2,M3,M0)	19	307B52	1	Key 2,4 - Spec. A
6	CONDENSER, LOAD TERMINAL 312A22	2	Spec. A (Some Plants Use 3)	20	307B253	1	Key 2,4,6 (Except Plts. With Manual Choke) Begin Spec. B
	312P87	3	Begin Spec. B	21	307B180	1	Relay, Reverse Current - Key 2,4,6
8	JUMPER, TERM. - VOLT. SELECTION - 1-PHASE PLANTS 332A439	2	Key 1,2 - To Spec. E	22	305A1	1	Regulator, Volt.-Chg. Circuit Key 2,4,6
	332A440	2	Key 1,2 - Begin Spec. E, All Key 3,4,6		332A222	1	Block, Term. - Remote Control Key 2,4,6
9	332A484	3	Jumper, Term. to Condenser - Key 1,2,3,4,6		332A406	1	BLOCK, TERMINAL 3-Place - Key 2,4, Spec. A -- Key 5

REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PARTS DESCRIPTION	
23	332A333	1	2-Place - Key 2,4,6 - Begin Spec. B		308A165	1	Key 2,4 (Repl. 308A94)	
			MARKER, TERMINAL BLOCK		308A9	1	Key 6	
24	332A438	1	Key 2,4 - Spec. A (4,5,6)	33	CABLE, BATTERY	2	Key 2,4,5,6 (Except Spec. 2428)	
25	332A483	1	Key 2,4,6 - Begin Spec. B (5,A1)		416A77	2	Key 2,4,5,6 (Except Spec. 2428)	
	332A426	1	Key 5 (1,2,3)	34	416A38	2	Key 6 (Spec. 2428 Only)	
26			RESISTOR, VOLTAGE REGULATOR - KEY 2,4,6		416A4	1	Cable, Battery Jumper, Key 2,4,6 (Repl. 416A1)	
	304-121	1	Spec. A (10-Ohm, 10-Watt)	35	307B597	1	Relay, Choke Disconnect - Key 4,6 Spec. F Through K (Repl. 307B4) Not used on plts. with manual choke.	
	304-251	1	Begin Spec. B (30-Ohm, 5-Watt)		36	301A974	1	Bracket, Start-Stop Switch Mtg., Key 2,4,5,6 For 308-90 Switch Only
			RESISTOR, CHARGE - KEY 2,4		37	323A207	1	Receptacle, Key 6 (Spec. 2206 Only)
27	304A256	3	To Spec. H (6-Ohm, 75-Watt)		38	301A878	1	Plate Control Box Panel - Key 6
27A	304A483	1	Begin Spec. H (3 - 6-Ohm, 225-Watt)			303-84	1	Rheostat, Volt. Control., Key 5
28	309-10	1	Switch, Ign. Cut-Off - Low Oil Press. (Opt.)					
29	308-97	1	Switch, Low Oil Press. Switch By-Pass (Repl. 308-37) Opt.					
30	301C853	1	Cover, Control Box - Key 2,4,6					
31	*		Cable, Stop & Choke Circuits Key 2,4,6					
32			SWITCH, REMOTE CONTROL START - STOP					

\* - Order by description giving complete Model, Spec., and Serial Number.

#### OPTIONAL AC METER PANEL EQUIPMENT GROUP



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	AMMETER		
	302-335		0-20 Amperes
	302P418	As	0-30 Amperes (Repl. 302-5)
	302P444	Req.	0-35 Amperes
	302P419		0-50 Amperes (Repl. 302-7)
2	VOLTMETER		
	302P420	As	0-150-Volts (Repl. 302-40)
	302P421	Req.	0-300-Volts (Repl. 302-41)
3	METER, RUNNING TIME - 115-V		
	302-212	1	60-Cycle
	302-102	1	50-Cycle
4	RESISTOR, RUNNING TIME METER		
	304P99	1	230-V
	304P125	1	460-V
5	308-12	1	Switch, Selector - Voltmeter
6	CIRCUIT BREAKER		
	320P18	As	20-Amperes
	320P19	Req.	25-Amperes
	320P58		30-Amperes
	325K2		35-Amperes
	320P52		50-Amperes
7	323P184	As Req.	Receptacle Dup - 2-Wire Plus Ground - 15-Amp
8	323-23	As Req.	Receptacle, 2-wire Twistlock 20-Amp
9	323-11	As Req.	Receptacle - 3-wire Twistlock 20-Amp
10	323-91	As Req.	Receptacle - 4-wire Twistlock 20-Amp
11	302B448	As Req.	Plate, Meter Face

**STARTING MOTOR & CHARGING GENERATOR GROUP (Not Illustrated)**

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>
	I91P86		*Motor, Starting - 6-V
	I91A116		Jumper, Starter Connection - Copper
	I91P105		**Generator, Charge - Incl. Reg. 6-V
	I91C90		Guard, Belt - Charge Gen.
	511P37		Belt, Generator Drive
	512P25		Pulley, Generator
	515A7		Key, Generator Pulley
	I91B91		Bracket, Generator

\* - For service or parts, contact Prestolite service, giving starter no. from nameplate.

\*\* - For service or parts, contact Delco service, giving generator no. from nameplate.

**THE FOLLOWING SPECIAL CONTROL PARTS ARE OPTIONAL AS USED ON MODEL KEY 6, SPEC. 1850 ONLY (Not Illustrated)**

Note: Control box is wall mtd. type. AC output leads are terminated in Junction Box.

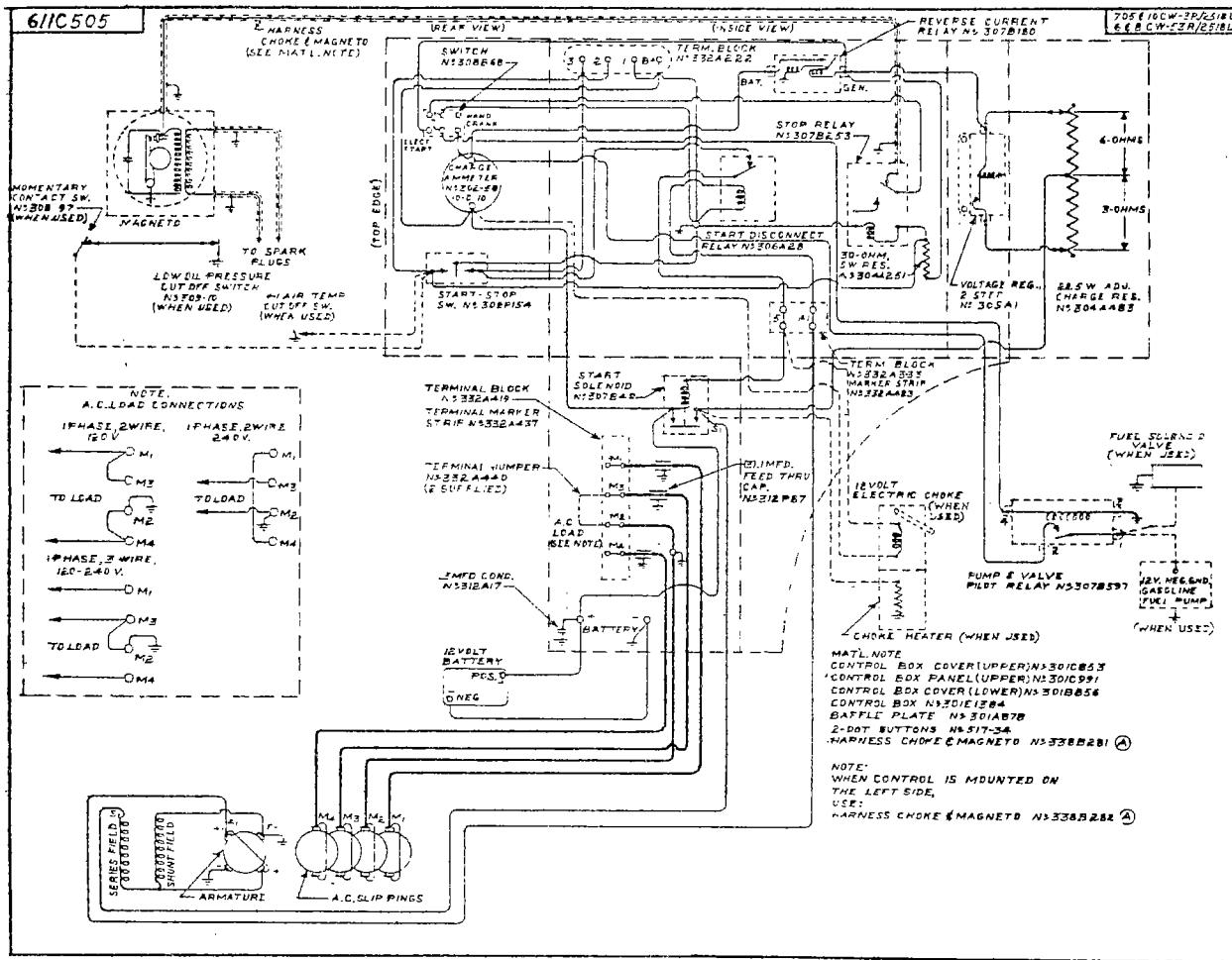
<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>
	302-212		Meter, Running Time
	308-68		Switch, Run-Stop-DRDT
	332A607		Block, Term. - 12-Place
	332A642		Strip, Marker - Blank
	308A29		Switch, Start
	338C235		Harness, Wiring
	301D1852		Box, Control
	301B1853		Panel, Control Box
	301C1854		Bracket, Control Box Mtg.
	301B1855		Box, Resistor
	508-26		Grommet, Rubber (3/8") Mtg. Bracket
	508-1		Grommet, Rubber (3/4") Output Box
	508-8		Grommet, Rubber (1/2") Output Box
	330-28		Box, AC Output
	330-6		Cover, AC Output Box

**SERVICE KITS**

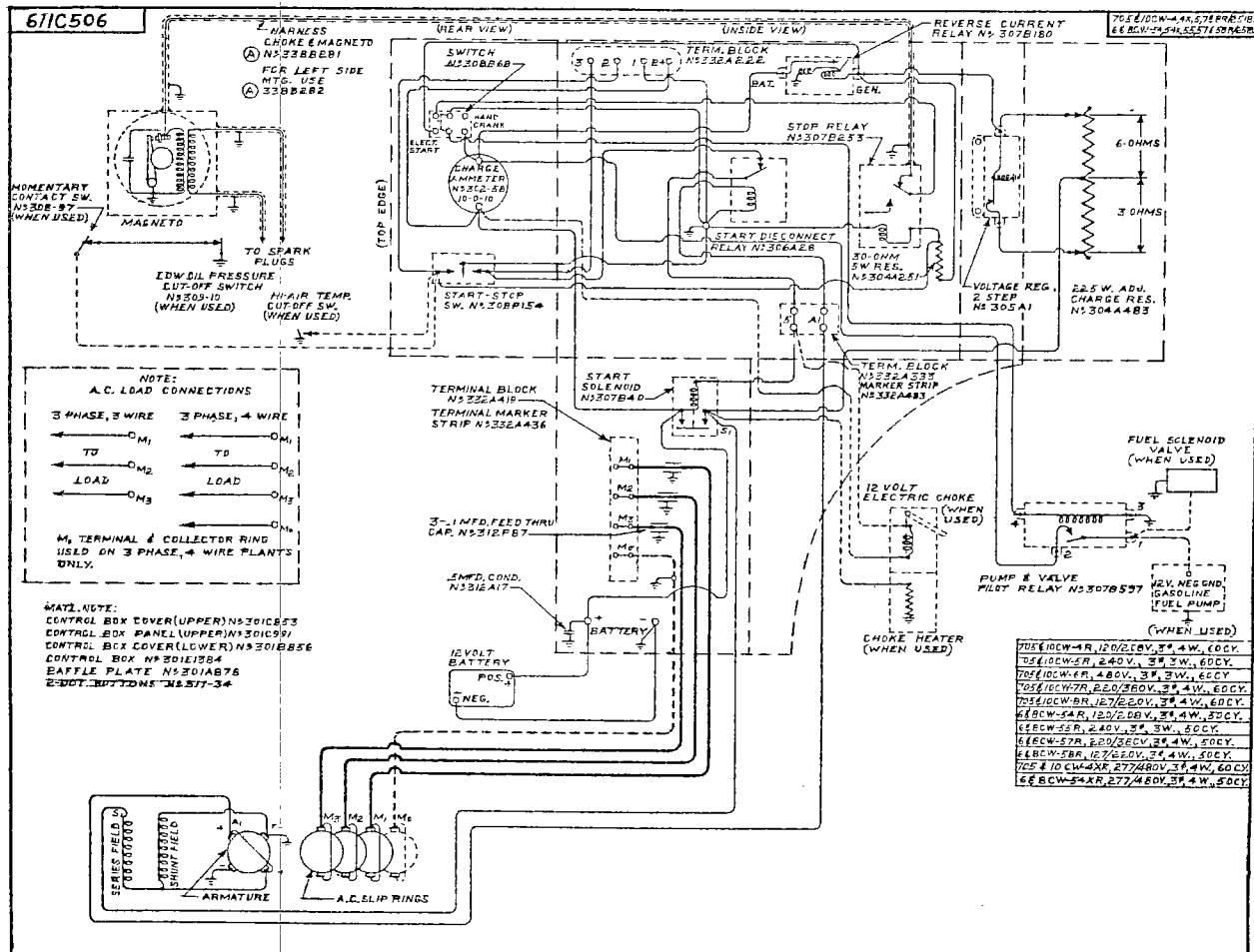
Note: For other kits, refer to the group for the part in question.

<u>REF. NO.</u>	<u>PART NO.</u>	<u>QTY. USED</u>	<u>PART DESCRIPTIONS</u>
	168K56		Gasket Kit, Plant - Complete
	525P90	As	Paint, Touch-up (Press. Can)
		Req.	12-oz. - Mouse Grey Enamel
	525P137		Paint, Touch-up (Press. Can)
			16-oz. - Green Enamel
	522K131		Overhaul Kit, Spec. A Only
			Key 1,2,3,4
	522K138		Overhaul Kit, Spec. B through J - Less Fuel Pump Kit - Key
			1,2,3,4
	522K210		Overhaul Kit, Spec. K through L - Less Fuel Pump Kit - Key
			1,2,3,4

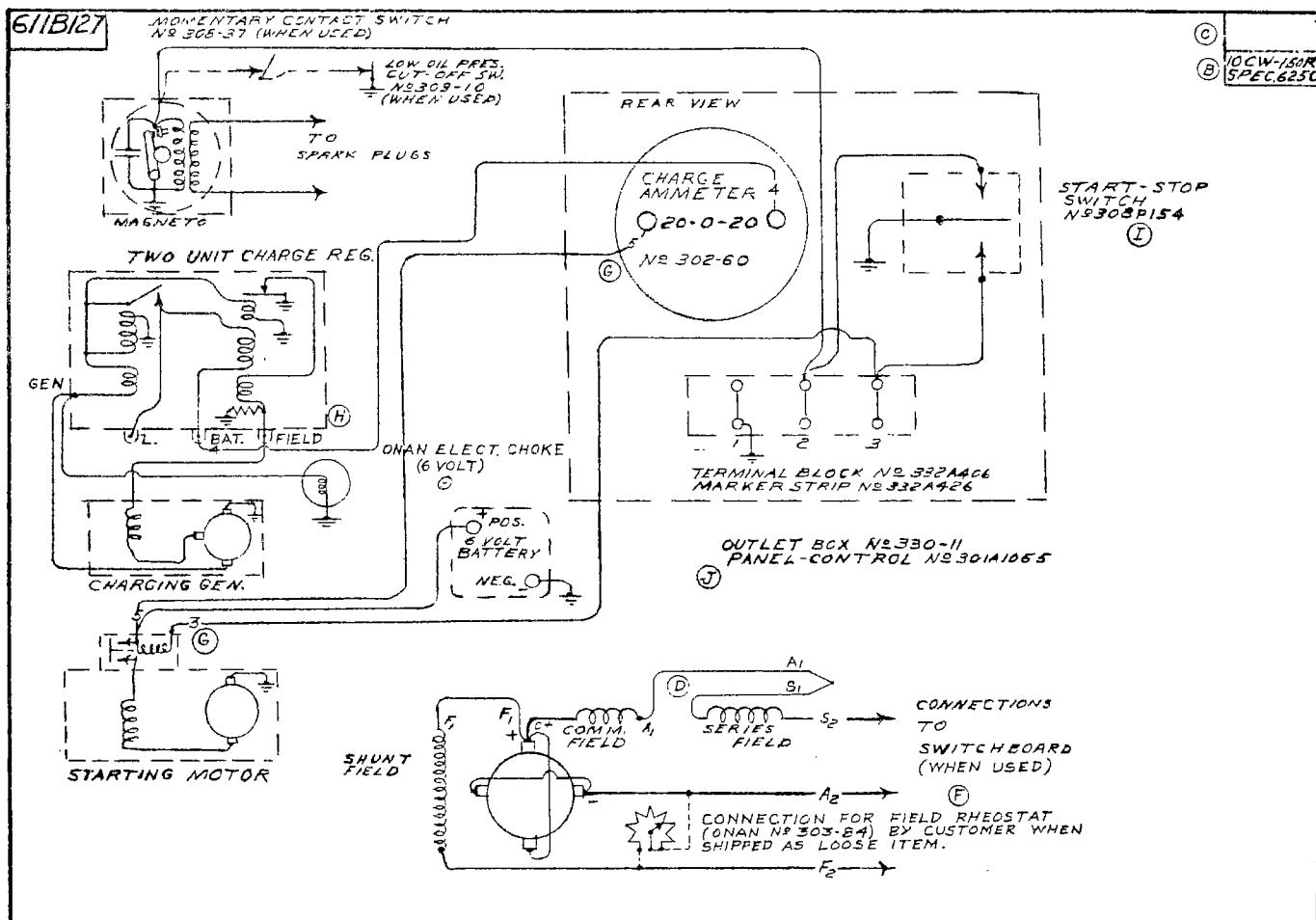
WIRING DIAGRAM #611C505  
SINGLE PHASE MODELS  
PENN STATE GASEOUS FUEL PLANTS  
BEGIN SPECIFICATION "L"



**WIRING DIAGRAM #611C506**  
**THREE PHASE MODELS**  
**PENN STATE GASEOUS FUEL PLANTS**  
**BEGIN SPECIFICATION "L"**

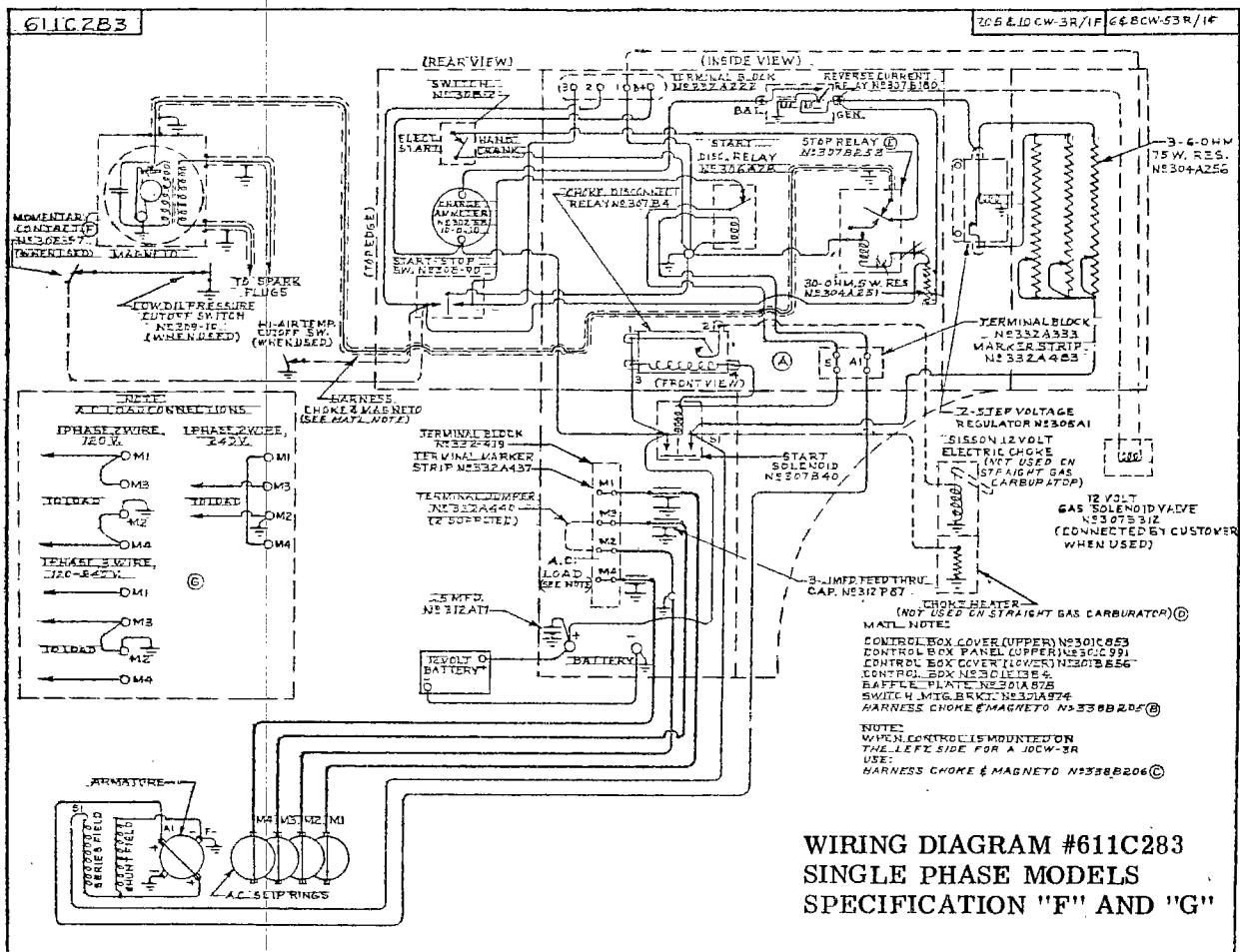


**WIRING DIAGRAM**  
**# 611B127**  
**250 VOLT, DC MODEL**  
**MAGNET USE PLANT**



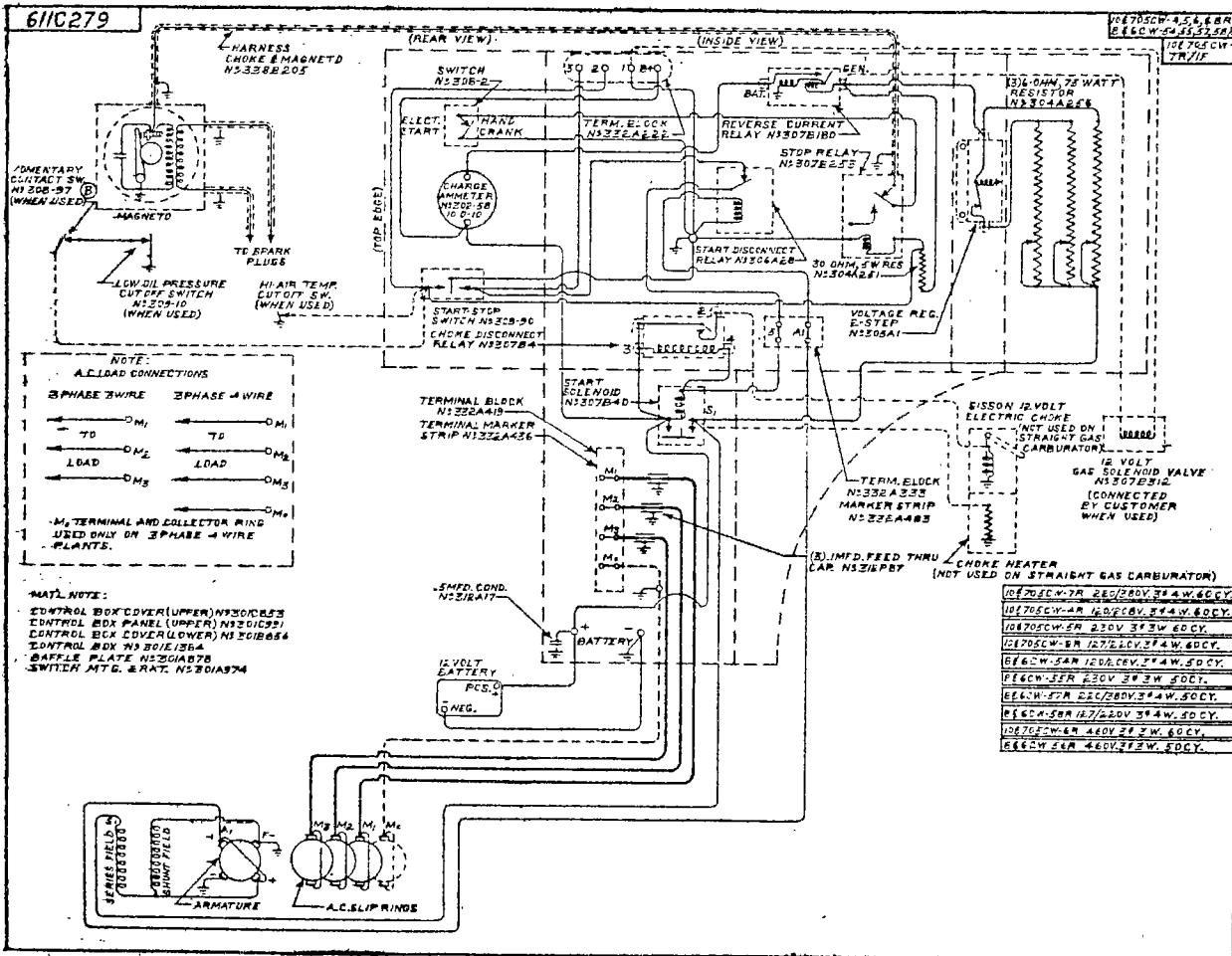
## **WIRING DIAGRAMS**

DIAGRAMS ARE SHOWN FOR STANDARD PLANTS BEGINNING WITH SPEC LETTER F. DIAGRAMS FOR PLANTS PRIOR TO SPEC F AND SPECIAL MODELS ARE AVAILABLE. GIVE COMPLETE MODEL, SPEC AND SERIAL NUMBER AS SHOWN ON THE PLANT NAMEPLATE.

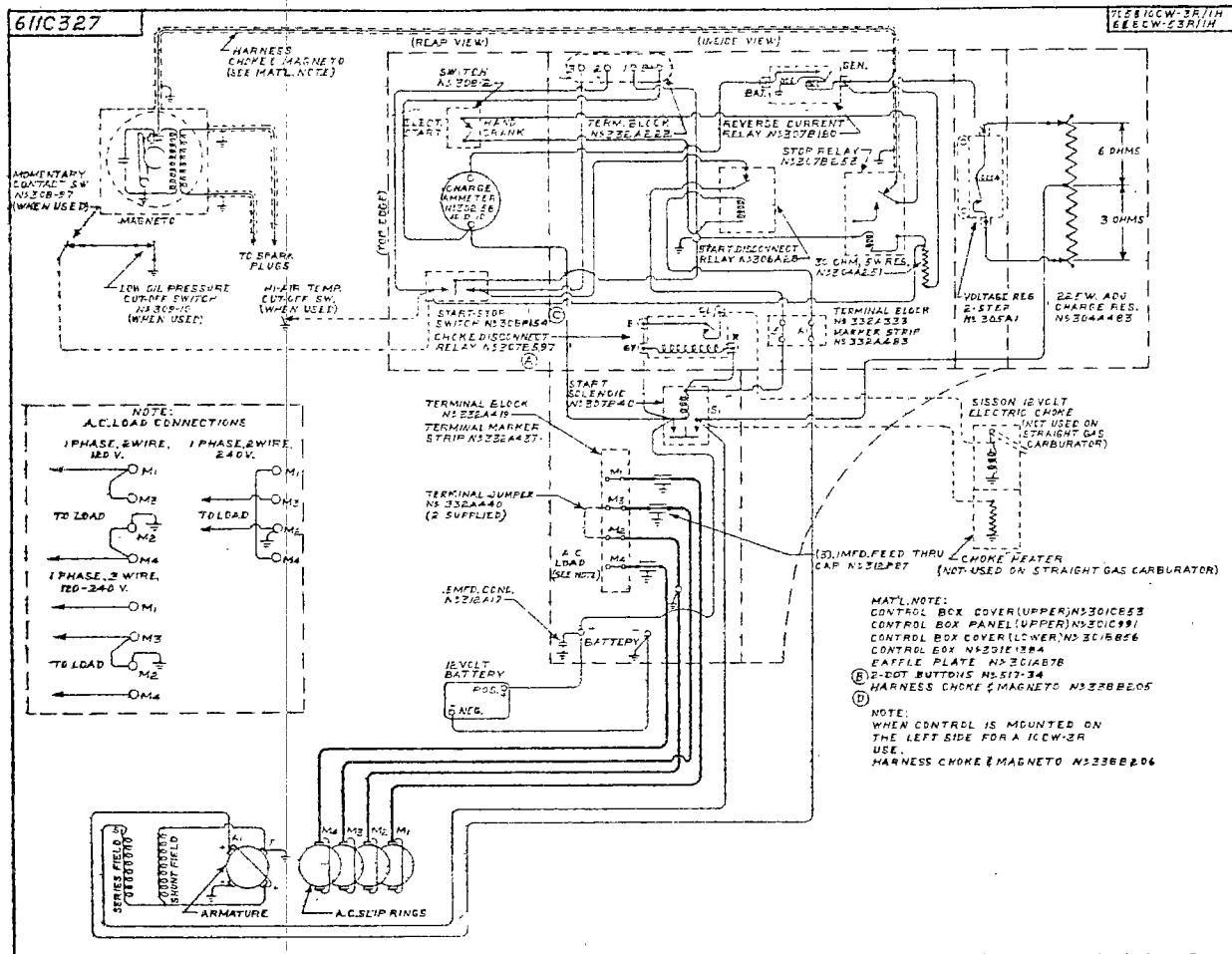


**WIRING DIAGRAM #611C283  
SINGLE PHASE MODELS  
SPECIFICATION "F" AND "G"**

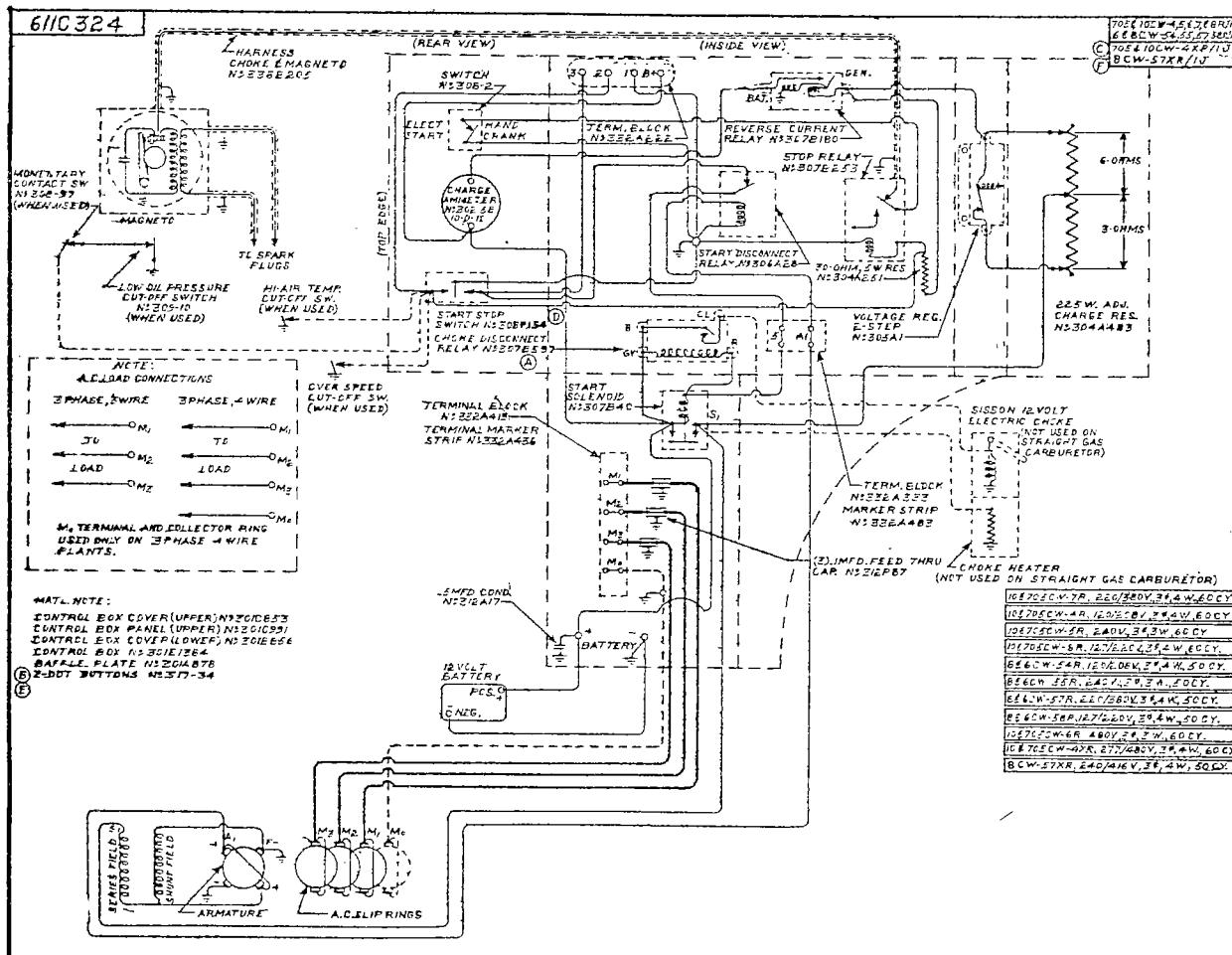
**WIRING DIAGRAM #611C279**  
**THREE PHASE MODELS**  
**SPECIFICATION "F" AND "G"**



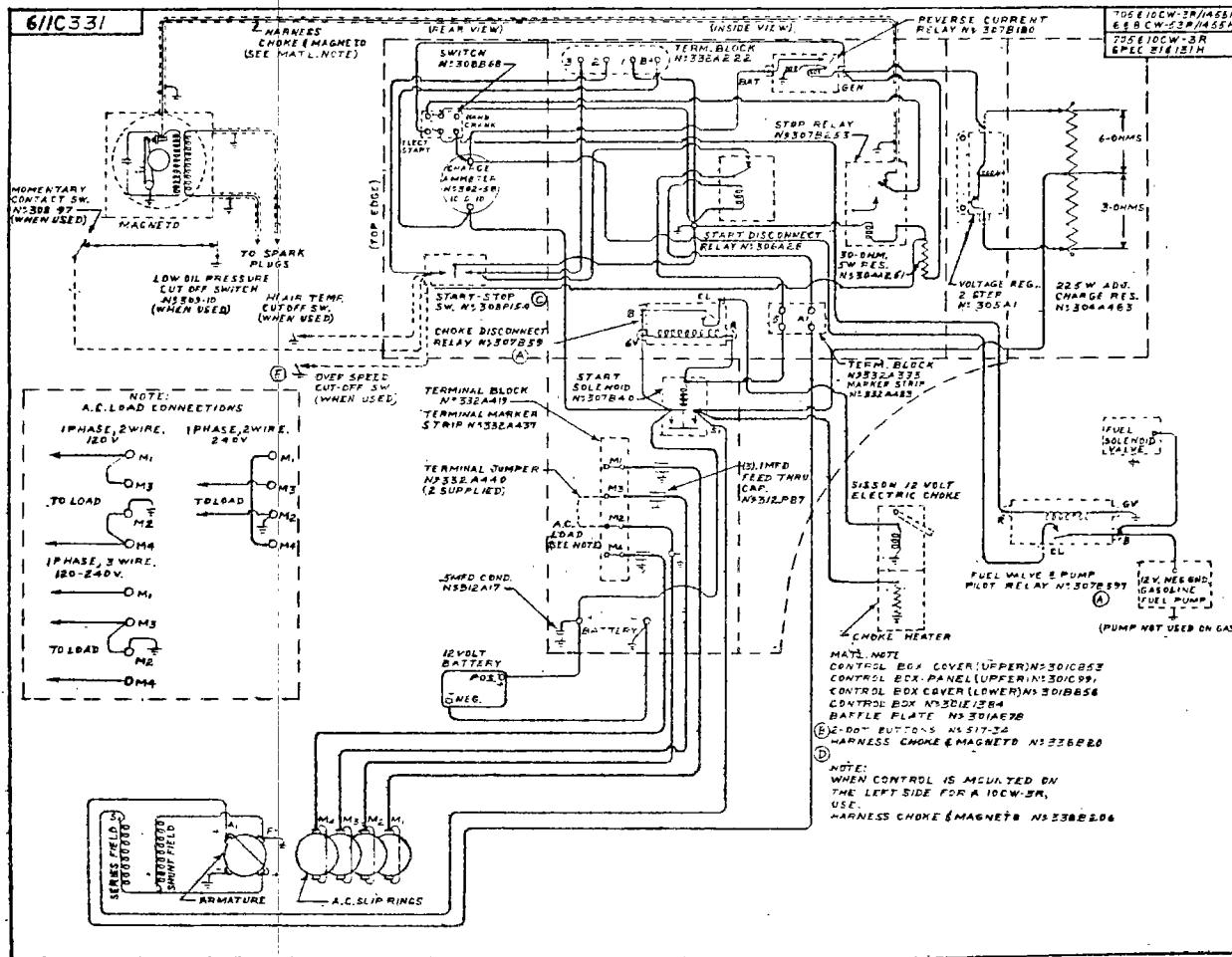
**WIRING DIAGRAM #611C327**  
**SINGLE PHASE MODELS**  
**SPECIFICATION "H", "J", "K"**  
**(Also Penn State Gasoline Plants)**



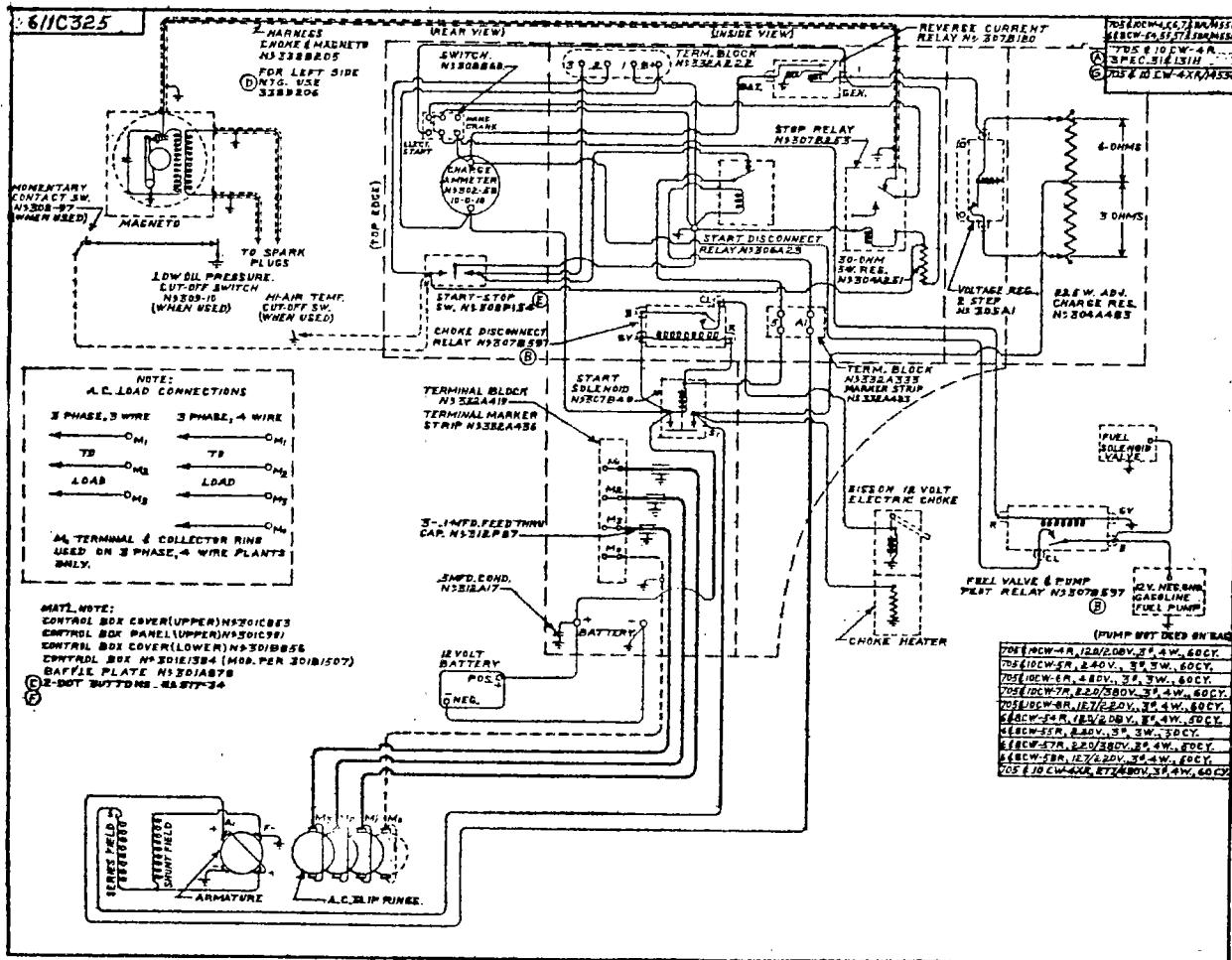
**WIRING DIAGRAM #611C324**  
**THREE PHASE MODELS**  
**SPECIFICATION "H", "J", "K"**  
**(Also Penn State Gasoline Plants)**

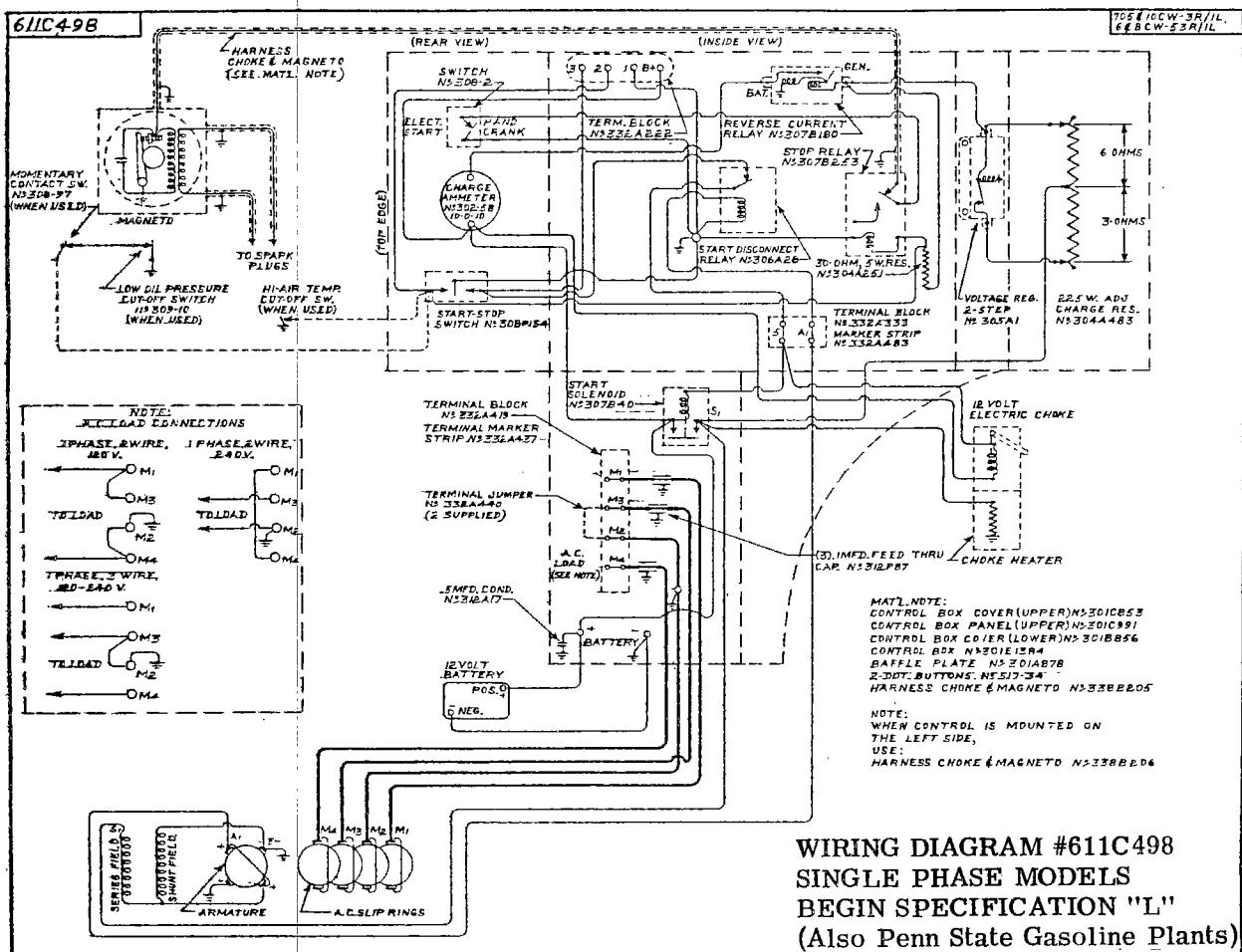


**WIRING DIAGRAM #611C331  
SINGLE PHASE MODELS  
PENN STATE GASEOUS FUEL PLANTS  
SPECIFICATION "H", "J", "K"**

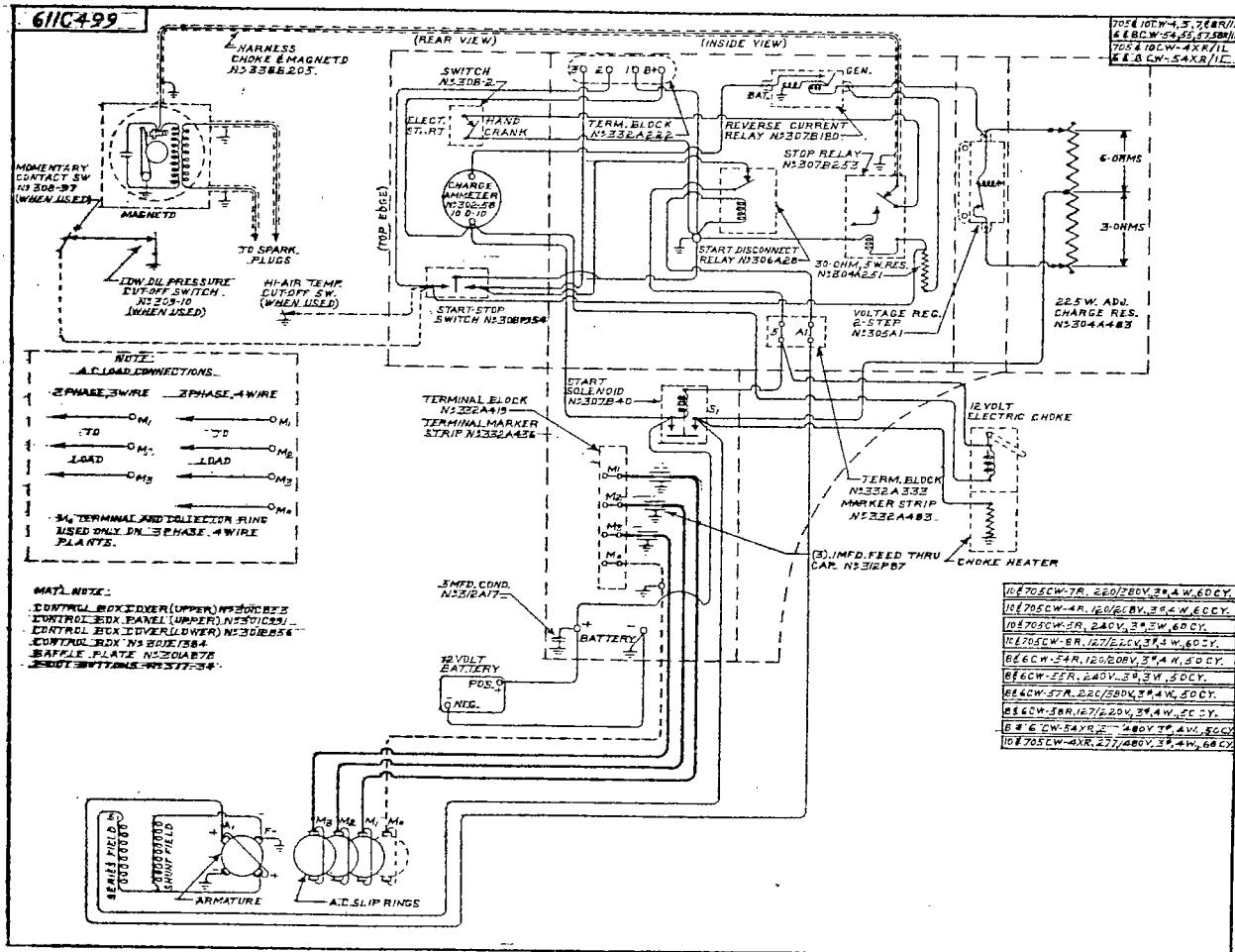


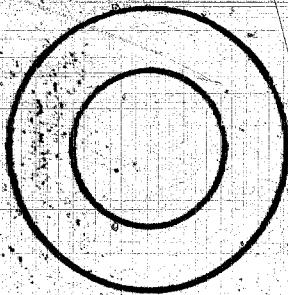
**WIRING DIAGRAM #611C325  
THREE PHASE MODELS  
PENN STATE GASEOUS FUEL PLANTS  
SPECIFICATION "H", "J", "K"**





**WIRING DIAGRAM #611C499  
THREE PHASE MODELS  
BEGIN SPECIFICATION "L"  
(Also Penn State Gasoline Plants)**





onan



## PARTS CATALOG

SERIES  
**CW**  
Welder

**ONAN**

STUDEBAKER CORPORATION

2818 UNIVERSITY AVE. S.E. MINNEAPOLIS, MINN. 55414  
IN CANADA: ONAN GENERATORS CANADA LTD., P.O. BOX 652, GUELPH, ONTARIO

PART NO.	DESCRIPTION	QUANT USED
CRANKCASE GROUP		
101C193	Crankcase - Incl. Camshaft & Main Brgs, Rear Brg. Plate Mt'd. - Less Studs and Rear Oil Seal, Plugs .....	1
101A70	Bearing, Camshaft - Front .....	1
101A50	Bearing, Camshaft - Rear .....	1
101B119	Plate Assembly, Rear Main Bearing - Incl. Brg. and Lock Pin .....	1
101A66	Bearing, Main - Front or Rear .....	2
516A72	Pin, Lock - Main Bearing .....	2
505-274	Plug, Pipe, Countersunk Hd. .....	4
517-18	Plug, Expansion - Rear Camshaft Brdg. Opening .....	1
502-2	Elbow, Inverted Flare - Oil Lines .....	2
520A11	Stud, Rear Bearing Plate - 5/16 x 1-7/16 .....	8
520A431	Stud, Cylinder Base - 1/2 x 2-5/16 .....	8
520A434	Stud, Cylinder Base - 3/8 x 1-13/16 .....	2
520A432	Stud, Oil Base - 7/16 x 3-1/16 .....	2
520A433	Stud, Oil Base - 7/16 x 2-1/8 .....	2
520A49	Stud, Gear Cover - 5/16 x 1-7/8 .....	7
520A118	Stud, Flywheel Housing - 3/8 x 1-1/2 .....	6
509-48	Seal, Oil - Rear .....	1
101K116	Gasket Kit - Rear Bearing Plate - 2 ea. .006", .015" .....	1
110A641	Gasket, Valve Compartment Cover .....	2
110B640	Cover, Valve Compartment .....	2
526-63	Washer, Copper - Cover Screw Gasket .....	2
110A707	Nut, Hex - Hardened - 1/2" - 20 - Cylinder Base Mounting .....	8
104A91	Nut, Hex - Hardened - 3/8-24 - Cylinder Base Mtg. .....	2
101B215	Housing, Flywheel .....	1
403A95	Bolt, Eye - Lifting .....	1

WHEN ORDERING PARTS BE SURE TO INCLUDE MODEL, SERIAL AND SPEC. NUMBER OF UNIT!

### OIL PUMP, OIL FILTER AND BY-PASS GROUP

120A222	Piston Valve, Oil By-Pass .....	1
120A270	Spring, Oil By-Pass Piston Valve.....	1
.526-69	Washer, Oil By-Pass Screw - Copper ..	1
120A224	Screw, Oil By-Pass .....	1
120A278	Pump, Oil .....	1
120A192	Gasket, Oil Pump Mtg.....	1
120B275	Cup, Intake - Oil Pump .....	1
122C89	Bracket, Oil Filter .....	1
122C56	Filter, Oil - Incl. Cartridge .....	1
193-33	Gauge, Oil Pressure .....	1
122-37	Cartridge, Oil Filter .....	1
502-57	Tee, Oil Filter Inlet .....	1
502-20	Elbow, Street - Oil Pressure Gauge Connection .....	1
502-3	Connector, Inverted Flare - Oil Lines to Filter .....	2
122B94	Line, Oil - Filter Inlet .....	1
122B95	Line, Oil - Filter Outlet .....	1

### CYLINDER & VALVE GROUP

110C756	Block, Cylinder - Right Hand - Incl. Valve Guides and Exhaust Seat .....	1
110C757	Block, Cylinder - Left Hand - Incl. Valve Guides and Exhaust Seat .....	1
110B644	Guide, Valve .....	4
110A646	Seat, Exhaust Valve - Stellite Faced .....	2
110B643	Valve, Intake .....	2
110B642	Valve, Exhaust .....	4
110A738	Spring, Valve .....	4
110A648	Retainer, Valve Spring .....	4
110A639	Lock, Valve Spring Retainer - Pair .....	4
520A11	Stud, Exhaust Manifold .....	10
520A429	Stud, Cylinder Head - 3/8 x 2-1/2 .....	8
520A430	Stud, Cylinder Head - 3/8 x 2 .....	4
115A34	Pappet, Valve - Incl. Adjusting Screw .....	2
110B645	Gasket, Cylinder Base .....	

PART NO.	DESCRIPTION	QUANT USED
CYLINDER & VALVE GROUP (CONT.)		
110D637	Head, Cylinder - Right Hand .....	1
110D638	Head, Cylinder - Left Hand .....	1
110B641	Gasket, Cylinder Head - Right or Left .....	2
104A91	Nut, Hex - 3/8" - 24 - Cylinder Head Mtg. - Hardened .....	18
526A127	Washer, Cylinder Head Mtg. .....	18
CONNECTING ROD & PISTON GROUP		
112-55	Piston - Incl. Pin .....	2
112A54	Pin, Piston .....	2
112A19	Ring, Lock - Piston Pin .....	4
113A57	Ring, Piston - Top Compression .....	2
113A58	Ring, Piston - 2nd Groove Compression .....	2
113A56	Ring, Piston - Oil Control .....	2
113-59	Ring Set, Piston - For 1 Piston .....	2
114B65	Rod, Connecting - Incl. Brgs. & Bushings .....	2
114B53	Bearing Half - Upper or Lower (Precision Type) .....	4
114B54	Bushing, Piston Pin to Connecting Rod (Semi-Finished) .....	4
114A20	Washer, Lock - Connecting Rod Screw .....	4
114A57	Screw, Connecting Rod .....	4
CRANKSHAFT & CAMSHAFT GROUP		
104D172	Crankshaft .....	1
104B1	Gear, Crankshaft .....	1
515-1	Key, Crankshaft Gear or Camshaft Gear .....	2
104A95	Washer, Crankshaft Gear .....	1
518-16	Ring, Lock - Crankshaft Gear Washer .....	1

WHEN ORDERING PARTS BE SURE TO INCLUDE MODEL, SERIAL AND SPEC. NUMBER OF UNIT!

105A112	Camshaft and Center Pin .....	1
105B107	Gear, Camshaft.....	1
150A440	Cup, Governor .....	1
150A413	Plate, Back - Governor Ball .....	1
150C417	Spacer, Governor Ball .....	1
150P437	Ring, Snap - Camshaft Center Pin .....	1
510-46	Ball, Fly - Governor .....	12
105A42	Washer, Thrust - Camshaft Gear .....	1
104A205	Flywheel -With Ring Gear .....	1
104-137	Gear, Ring.....	1
104A160	Washer, Flywheel .....	1
515-90	Key, Flywheel .....	1
134C388	Wheel, Blower .....	1
134C387	Hub, Blower Wheel .....	1
520A451	Stud, Blower Wheel .....	1
192B193	Support, Guide - Crank .....	1
516A88	Pin, Dowel - Crank Support .....	2
192C204	Crank, Hand Start .....	1

#### OIL BASE GROUP

102E220	Base, Oil .....	1
102B223	Foot, Oil Base .....	2
102A221	Cover, Oil Base Opening .....	1
102A222	Gasket, Cover .....	1
102B215	Gasket, Oil Base to Crankcase .....	1
505-268	Pipe, Oil Drain - 3/4" x 9" .....	1
505-29	Coupling, Oil Drain Pipe - 3/4" .....	1
505-130	Plug, Oil Drain Pipe - 3/4" Sq. Hd. ....	1
505-51	Elbow, Street - Oil Drain - 3/4" x 90 deg .....	1
123C402	Tube, Oil Fill .....	1
123C388	Housing, Crankcase Breather - Incl. Valve and Cover .....	2
123A380	Gasket, Oil Fill Tube (1), Breather Housing (1) .....	1
123A315	Valve, Crankcase Breather .....	1
123B409	Cap, Crankcase Breather .....	1

PART NO.	DESCRIPTION	QUANT USED
* OIL BASE GROUP (CONT.)		
123A410	Gasket, Breather Cap .....	1
123A378	Indicator, Oil Level .....	1
402A36	Cushion, Mounting - Upper .....	3
402A38	Cushion, Mounting - Lower .....	3
402A46	Bushing, Cushion Spacer .....	3
526A124	Washer, Mounting Cushion .....	3
GEAR COVER GROUP		
103C115	Cover, Gear - Complete Assembly .....	1
509-19	Seal, Oil - Crankshaft Front .....	1
150B416	Arm and Shaft, Governor .....	1
510-48	Bearing, Needle - Upper .....	1
510-49	Bearing, Needle - Lower .....	1
510-14	Ball, Bearing - Shaft Thrust .....	1
509-46	Seal, Oil - Governor Shaft .....	1
150A444	Yoke, Governor Shaft .....	1
516-90	Pin, Stop .....	1
150A411	Bracket, Governor Spring .....	1
150A438	Screw, Adjusting - Governor Sensitivity .....	1
520A363	Stud, Arm Cover Mtg. ....	1
103C110	Gasket, Gear Cover Mtg. ....	1
150A115	Spring, Governor .....	1
150A96	Stud, Governor Spring Tension .....	1
150A398	Nut, Governor Speed Adjusting .....	1

WHEN ORDERING PARTS BE SURE TO INCLUDE MODEL, SERIAL AND SPEC. NUMBER OF UNIT!

**IGNITION GROUP**

161A148	Magneto - Incl. Drive Gear - Less Stop Button .....	1
160A124	Gasket, Magneto Mtg.....	1
160B339	Gear, Magneto Drive .....	1
161-108-	Condenser, Magneto ..... 161-128	1
161-86	Point Set, Magneto Breaker .....	1
167A1213	Cable, High Tension - Right Hand .....	1
167A1214	Cable, High Tension - Left Hand .....	1
167-35	Plug, Spark .....	2
166-105	Nipple, Spark Plug .....	2
167A41	Shield, Spark Plug .....	2
191B7	Motor, Starting - 12 Volt (Engine Spec. 245A) .....	1
191P77	* Motor, Starting - 6 Volt (Engine Spec. 251A) .....	1

**FUEL SYSTEM GROUP**

140C266	Cleaner, Air .....	1
123A411	Tube, Air Cleaner to Breather Cap .....	1
149C405	Pump, Fuel .....	1
149K5	Kit, Fuel Pump .....	1
502-2	Elbow, Inverted Flare - Fuel Pump Inlet & Outlet, Carburetor Inlet .....	3
149A388	Spacer, Fuel Pump Mtg. .....	1
159B407	Line, Fuel - Pump Inlet .....	1
149A171	Bracket, Fuel Line - Fuel Line Connection .....	1
149B403	Line, Fuel - Pump to Carburetor .....	1
154A266	Manifold, Intake .....	1
154A252	Gasket, Intake Manifold Mtg. .....	2
141C466	Carburetor (See Carburetor Parts Group) .....	1
520A118	Stud, Carburetor Mtg. - 3/8" x 1-1/2" .....	2
154A133	Gasket, Carburetor Mtg. .....	1
155C352	Manifold, Exhaust .....	1
155A170	Adapter, Exhaust Manifold to muffler .....	1
154A133	Gasket, Manifold to Adapter .....	1
155A343	Gasket, Exhaust Manifold Mtg. .....	2
155-389	Muffler, Exhaust .....	1

PART NO.	DESCRIPTION	QUANT USED
AIR PRE-HEATER GROUP		
133C31	Adapter, Heat - Air Cleaner Top .....	1
133A32	Tube, Air-Blower Housing Top Outlet .....	1
503A215	Hose, Air - Air Tube to Adapter .....	1
503-43	Clamp, Air Hose .....	2
CARBURETOR PARTS GROUP		
141C466	Carburetor - Less Choke arm and Control Rod .....	1
141A496	Bracket, Choke Control Rod .....	1
141A497	Rod, Choke Control .....	1
145A60	Lever, Choke Shaft .....	1
141-530	Body, Air Intake - Incl. Shaft Bushing #141-531 .....	1
141-531	Bushing, Choke Shaft .....	1
141A478	Shaft, Choke .....	1
141-532	Plate, Choke .....	1
141-471	Screw, Choke Plate .....	2
141-8	Needle, Idle Adjusting .....	1
141-9	Spring, Idle Needle .....	1
141-533	Head, Filter .....	1
141-534	Washer, Fibre - Filter Head .....	1
141-535	Float .....	1
141-206	Axle, Float .....	1
141-536	Gasket, Intake Body To Fuel Bowl .....	1
141-537	Screw, Intake Body To Fuel Bowl .....	6
141-538	Bowl, Fuel .....	1
141-70	Plug, Drain .....	1
141-544	Plug, Power Jet Valve Channel .....	1
141-545	Gasket, Fuel Bowl to Throttle Body .....	1

WHEN ORDERING PARTS BE SURE TO INCLUDE MODEL, SERIAL AND SPEC. NUMBER OF UNIT!

141-546	Screw, Fuel Bowl to Throttle Body .....	2
141-547	Body, Throttle - Incl. Shaft, Plate, and Lever .....	1
141-548	Shaft and Lever - Incl. Stop Screw .....	1
141-551	Plate, Throttle .....	1
141-257	Screw, Throttle Plate .....	2
141-552	Lever, Throttle .....	1
141-2	Screw, Throttle Lever .....	1
141-485	Venturi .....	1
141-553	Jet, Adjustment, Main .....	1
141A77	Washer, Fibre - Main Adjustment .....	1
141-554	Jet, Idle .....	1
141-555	Jet, Discharge .....	1
141-556	Jet, Well Vent .....	1
141-557	Valve, Fuel Inlet .....	1
141A77	Washer, Fibre - Fuel Valve .....	1
141-529	Kit, Gasket .....	1

#### GOVERNOR ACCESSORY GROUP

150B470	Booster, Governor Speed (Assembly) .....	1
150A425	Ring, Gasket - Booster Mtg. ....	1
150A366	Spring, Booster - Internal .....	1
150K434	Kit, Diaphragm Replacement - Booster .....	1
150A378	Plate, Diaphragm - Booster .....	1
150A374	Gasket, Diaphragm Plate - Booster .....	1
150A376	Bracket, Internal Spring - Booster .....	1
150A495	Bracket, External Spring - Booster .....	1
516-85	Pin, Roll - 3/32 x 3/4" - Booster .....	1
516-39	Pin, Roll - 3/32 x 5/8" - Booster .....	1
150A471	Spring, External - Booster .....	1
150A410	Link, Governor Arm to Carburetor .....	1
150A300	Joint, Ball - Governor Line .....	1
150C454	Cover, Governor Arm .....	1

PART NO.	DESCRIPTION	QUANT USED
<b>AIR HOUSING GROUP</b>		
134D456	Housing, Blower .....	1
134D396	Scroll, Blower Housing .....	1
134B397	Grille, Blower Housing Air Outlet .....	1
134E408	Panel, Blower Housing Front .....	1
134B398	Plate, Baffle - Left Hand Cylinder .....	1
134B399	Plate, Baffle - Right Hand Cylinder .....	1
134B402	Extension, Left Hand Baffle Plate .....	1
134B403	Extension, Right Hand Baffle Plate .....	1
134B437	Shroud, Left Hand Cylinder - With Fasteners .....	1
134B438	Shroud, Right Hand Cylinder - With Fasteners .....	1
134B414	Catch, Shroud Fastener - Right Hand Lower .....	1
134A411	Catch, Shroud Fastener - Right Hand Upper .....	1
134A413	Catch, Shroud Fastener - Left Hand Lower .....	1
134B410	Catch, Shroud Fastener - Left Hand Upper .....	1
517-9	Plug, Blower Housing Air Tube .....	1

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